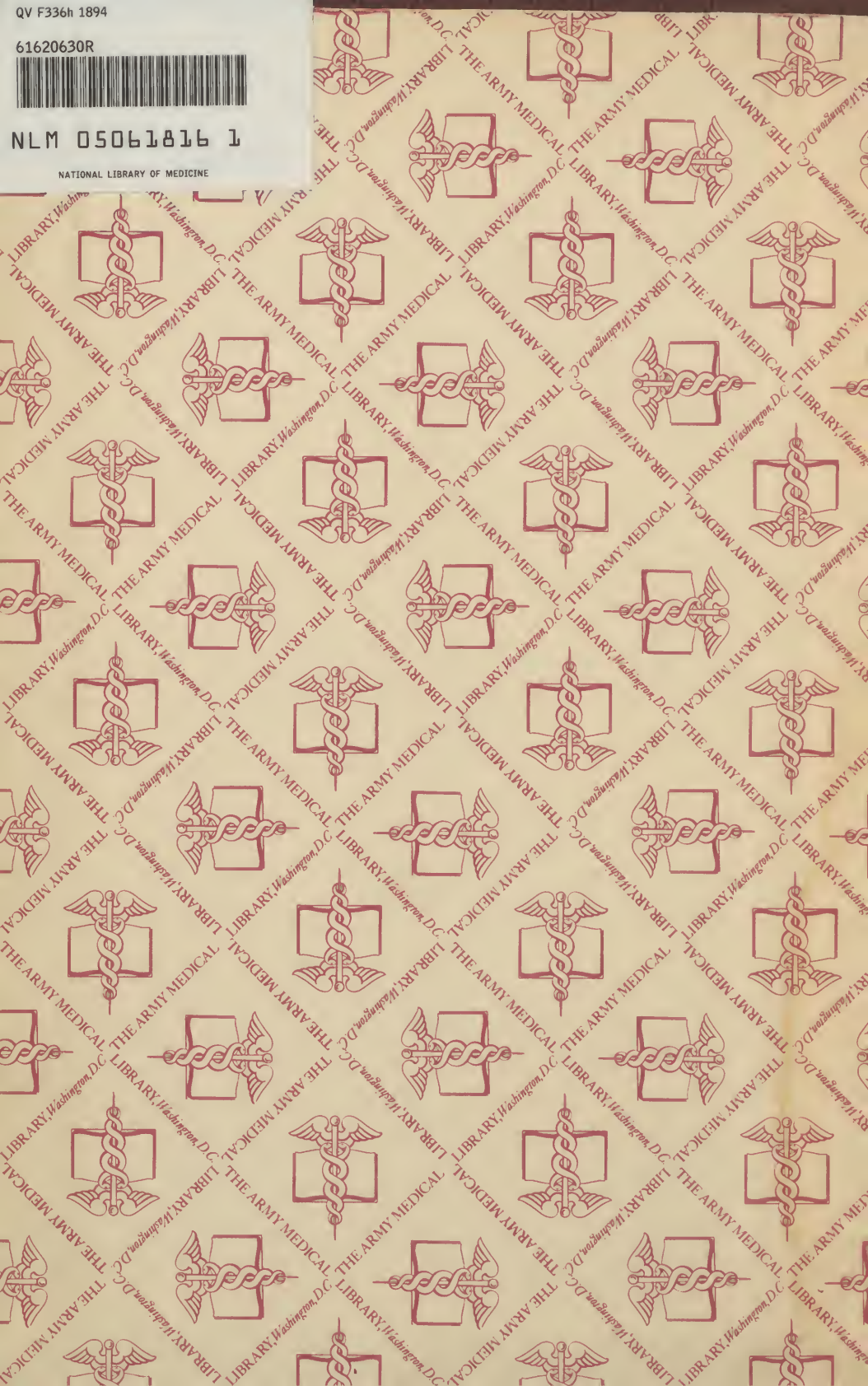

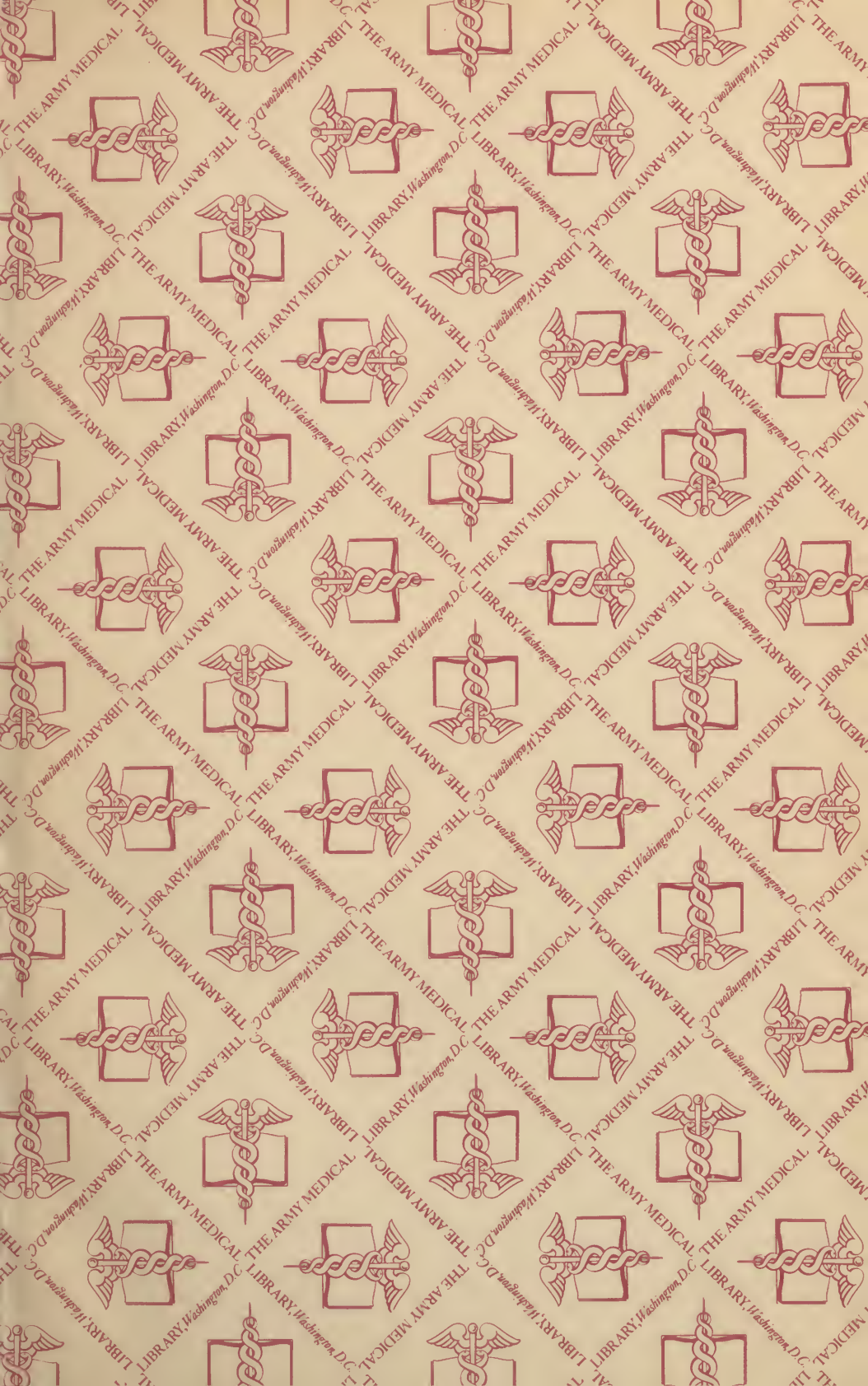
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FENNER'S HAND BOOK

— OF THE —

UNITED STATES PHARMACOPŒIA

SEVENTH REVISION, 1890–1893.

A KEY TO ALL OFFICIAL PREPARATIONS.

Comparing the preparations of the present Pharmacopœia with those formerly official and converting the metric weight and measure directed in the Pharmacopœia into proportionate commercial weight and measure; with medicinal uses and doses of new preparations, convenient tables, etc.

Compiled and arranged by

B. FENNER,

Author of FENNER'S COMPLETE FORMULARY, FENNER'S WORKING FORMULÆ, ETC.

1894.

Published by B. FENNER,
WESTFIELD, N. Y.

Printed By
The Fenner Press,
Westfield, N. Y.

PREFACE.

The advent of the Seventh Decennial Revision of the United States Pharmacopœia, introducing Metric Weight and Measure in the preparation of its formulas, and otherwise making many important changes in official preparations, without comment or explanation, is the excuse, (if any be needed) for the publication of this volume.

Whatever may be the advantages of the Metric System of weight and measure in the practice of Pharmacy, the fact remains that it is not the commercial system; and the majority of druggists, notwithstanding the persistent efforts that have been made to introduce it, are not sufficiently familiar with it to apply it readily in the preparation of medicines.

One object of this work is to convert the quantities, expressed in Metric weight and measure in the formulas of the Pharmacopœia, into proportionate quantities, expressed in commercial weight and measure, with which all druggists are familiar. By so doing, the Metric System will be more rapidly acquired by druggists and, at the same time, much tedious calculation and annoyance will be avoided. Another object is to point out the differences between this and the former standard, so that druggists may readily see how preparations which they may have on hand made by former authority correspond with the present standard. Physicians and others frequently ask "What is the difference between the present official preparation and that which we have been using for the past 10 years?" Few druggists can answer such a question intelligently without some convenient reference, like this Hand-Book.

This work is in no sense intended to take the place of the United States Pharmacopœia, but, is simply an aid for those who find the present Pharmacopœia slightly in advance of their experience. In a little while, a few years at most, druggists will become familiar with the changes in the present Pharmacopœia as they have with those of the past; but meanwhile, an explanation, a suggestion, or a comparison will be an aid to the understanding of the new authority.

The Pharmacopœia of 1870 directed troy weight and apothecary measure; the 1890 revision directed parts by weight, of both solids and liquids, except in the case of fluid extracts, pills and troches, where metric weight and measure were introduced; the present, 1890 Pharmacopœia, directs, chiefly, metric weight for solids, and metric measure for liquids. These changes cannot but be confusing to those who prescribe as well as to those who make preparations, and, taken together with important changes that have been made in the strength and composition of many preparations in the new authority, some work of explanation is a necessity to the majority of druggists. As such this volume is respectfully submitted by

THE AUTHOR.

Westfield, N. Y., March, 1894.

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PRELIMINARY.

HAND-BOOK OF THE UNITED STATES PHAMACOPŒIA 1890–1893.

INTRODUCTORY.

In this hand-book, drugs or substances that are simply gathered, without other preparation for market than curing, drying or treating them for preservation, are not included, but only such drugs or substances as are in some manner prepared by the art of pharmacy or chemistry. For example, Absinthuim, Acacia, Buchu, etc., being naturnl drugs are not mentioned, but Aloes, Camphor, Styrax, etc., being prepared drugs are mentioned, also all official chemical substances and all preparations included in the seventh revision of the United States Pharmacopœia.

This work is designed to be supplementary, only, to the Pharmacopœia, giving such information in regard to its subjects, as is most important for druggists to know or learn:—The composition of preparations either chemical or pharmaceutical, formulas for such preparations as it is expedient for druggists to prepare, the relative strength of preparations compared with former authority and the chief properties, uses and doses of preparations or substances newly introduced into the Pharmacopœia. For convenient reference, also, are noted the specific gravity of most liquid preparations, with the freezing and boiling points of many, the melting points of fatty bodies, and the solubility of most definite, solid or crystalline substances in water, alcohol or other common media. Reference is made under each subject to the page of the Pharmacopœia, and also to the page or pages of Fenner's Complete Formulary on which the subjects and further information regarding them may be found.

In converting the metric weight and measure of the formulas of the Pharmacopœia into commercial weight and measure, the amounts which follow the metric in parenthesis ( ) are not designed to represent the *exact* metric weight or measure stated, but only some convenient quantity which will be in the *same proportion* as is directed of the metric weight or measure. For example Hydrochloric acid 100 grammes (or 5 ounces by weight), distilled water 219 grammes (or 11 ounces, nearly, by weight) does not mean that 5 ounces is equivalent to 100 grammes or 11 ounces to 219 grammes, but, that the *proportions* of the metric weight directed and the commercial weight given are relatively the same. To save continual repetition some abbreviations of our own are used in place of the terms employed in the Pharmacopœia. They are explained under "abbreviations and signs," and will, we think, be readily understood.

GENERAL CHANGES ADOPTED IN THE 7th REVISION OF THE UNITED STATES PHARMACOPŒIA.

1. The expression in formulas, of definite quantities in metric weight and measure instead of in parts by weight as in the sixth revision.

2. The placing of the basic or radical name of a substance before its combining acid or element as Sodium Carbonate, instead of Carbonate of Sodium, Potassium Iodide, instead of Iodide of Potassium, Quinine Sulphate instead of Sulphate of Quinine.

3. The expression of the atomic weight of chemical substances in their true relation with hydrogen taken as 1, according to the latest and most approved authority, for example Oxygen 15.96 instead of 16, Bismuth 208.9 instead of 210, etc. See table of atomic weights.

4. The expression of temperature at which the specific gravity of most liquids is calculated at 15° C. (59° F.) instead of 15.6° C. (60° F.) as formerly. This is now according to the best usage and authority. In this work we have generally designated the former as N. T., normal temperature, instead of repeating the figures.

ABBREVIATIONS AND SIGNS.

C Centigrade or Celsius thermometric scale.

Cc. Cubic centimeter or cubic centimeters, the present U. S. abbreviation. In the former revision this was C. c. and it is commonly written c. c.

Chemical Symbols. See table of elementary substances.

F. Fahrenheit thermometric scale.

F C F. Fenner's Complete Formulary. < F C F, refer to or see Fenner's Complete Formulary.

fl. Before ounce or drachm, fluid, as fl.ounce for fluidounce.

Gm. Gramme or grammes. This is the present U. S. abbreviation; it is also commonly written gram or grams.

gr. Grain or grains, also abbreviated grn. Because of its similarity to gm. the word grain should always be written in prescriptions. Gr. is also used as an abbreviation for gramme in some foreign countries.

L. or l. Litre. This abbreviation is not used in the Pharmacopœia, but is frequently seen in formulas.

M. Mix. Not used in the Pharmacopœia, but very common in formulas.

N. Normal. Used in the U. S. test solutions as $\frac{N}{1}$=normal, $\frac{N}{2}$=seminormal, $\frac{N}{10}$=decinormal, $\frac{N}{100}$=centinormal.

N. T. Normal Temperature. Our own abbreviation for the temperature at which specific gravity is generally taken; 15° C. (59° F.).

Pharm. or P. Pharmacopœia. May refer to any Pharmacopœia, or to the present or former U. S. authority. U. S. P. is also used.

sp. gr. Specific gravity, sometimes, also, written s. g.

T. S. Test Solution. Abbreviation not heretofore used in the U. S. P.

U. S. The United States Pharmacopœia, also U. S. P. In this work U. S. refers to the present (1890) Pharmacopœia. <U. S., p. 28, refer to or see the U. S. Pharm., page 28.

V. S. Volumetric Solution. Abbreviation not heretofore used in the U. S. P.

FENNER'S HAND-BOOK

— OF THE —

UNITED STATES PHARMACOPŒIA,

SEVENTH REVISION, 1890—1893.

ACETANILIDUM, Acetanilid, Phenylacetamide, Antifebrin, $C_6H_5NH.C_2H_3O$. "An acetyl derivitive of aniline," <U.S., p. 4, *new*.

This new official salt is prepared by mixing, in equivalent quantities, pure aniline with glacial acetic acid and heating them together at a high temperature. Aniline acetate, ($C_6H_5NH_2C_2H_4O_2$) first results but after continuing a strong heat for several hours, water (H_2O,) is eliminated and acetanilid formed. This is then distilled by raising the heat to 285C. at which point it is vaporized and passes over. The product crystallizes in the cold water into which it is received, it being soluble only in 200 parts of cold water. The crystals are then collected and dissolved in 20 times their weight of boiling water, (soluble in 18 parts,) the solution concentrated by boiling and then allowed to cool, making pure crystals of acetanilid.

Odorless and colorless, unctious laminæ of slight burning taste; melting point 113° C., boiling point 295° C. Soluble in 200 parts water at N T, and in 18 parts at 100° C.; readily soluble in alcohol, ether, chloroform and benzene.

This is the acetanilid of commerce which is extensively used as an ingredient of headache powders and proprietary hypnotics and analgesics. It is also much prescribed by physicians, being first introduced to them under the proprietary title "Antifebrin" which was extensively used to reduce temperature in febrile conditions. The average adult dose is 5 grains, maximum dose should not exceed 10 grains; large doses produce extreme depression and prostration.

ABSTRACTA. Abstracts. These preparations which were first introduced in the 1880 U S. P. have never met with favor and are dismissed altogether from the present revision.

ACETA, Vinegars. In the present Pharmacopœia only two Vinegars are retained; Acetum Lobeliæ and Acetum Sanguinariæ being dismissed,

ACETUM OPII. Vinegar of Opium. The new Pharm. directs powdered opium 100 gm. (or 729 grains) nutmeg in No. 30 powder, 30 gm. (or 218 grains), sugar, 200 gm. (or 1458 grains), diluted acetic acid, sufficient to make 1000 Cc. (or 16 fl.ounces.)

This is the same as in the sixth revision except that metric weight and measure are directed instead of parts by weight. The finished preparation represents 10 per cent. of powdered opium. <U. S., p 4, F C F, p 59.

ACETUM SCILLÆ. Vinegar of Squill. The new Pharm. directs squill in No. 30 powder, 100 gm. (or 729 grains), diluted acetic acid, sufficient to make 1000 Cc. (or 16 fl.ounces.)

The new preparation is the same as in the sixth revision except the substitution of metric weight and measure for parts by weight. The finished preparation represents 10 per cent. of Squill. <U. S., p 5, F C F, p 53.

ACIDA. Acids. In the new Pharm. two acids are added, *Hypophosphorous* and *Stearic*. There are no other important changes except the percentage of strength of p osphoric acid which is increased from 50 to 85 per cent of orthophosphoric acid. This makes a corresponding change in all preparations in which phosphoric acid is directed, and care will be required in working formulas in which it is to be used. The percentage strength also of nitric and sulphuric acids are slightly lowered.

ACIDUM ACETICUM. Acetic Acid. "A liquid composed of 36 per cent., by weight, of absolute acetic acid, ($HC_2H_3O_2$) and 64 per cent. of water." <U. S., p 5.

No change is made in this preparation, sp. gr. at N T, about 1.048. It unites with most basic substances forming *acetates*. <F C F, p 56, 57, 694, 734.

ACIDUM ACETICUM DILUTUM. Diluted Acetic Acid. Acetic acid, 100 gm. (or 2⅝ fl.ounces), distilled water, 500 gm. (or 13⅜ fl.ounces). Mix them.

The preparation is the same as in the sixth revision, except the substitution of metric weight for parts, and contains 6 per cent., by weight, of absolute acetic acid. Its sp. gr. at N T about 1.008. <U. S. p 5, F C F, p 58.

ACIDUM ACETICUM GLACIAL. Glacial Acetic Acid. $HC_2H_3O_2$. "Nearly or quite absolute acetic acid." <U. S. p 6.

This is the same as in the former revision, being at least 99 per cent. absolute acetic acid; sp. gr. at N T 1.058. It remains liquid at N T but at somewhat lower temperature crystallizes; boils at 118 C. <F C F, p 56, 58.

ACIDUM ARSENOSUM. Arsenous Acid. Arsenic Trioxide As_2O_3. <U. S., p 6.

Note the change of spelling of the Latin and English title by the omission of i before o, also the supplementary title *arsenic trioxide*. It forms salts with bases, known as *arsenites*. For solubility and characteristics see F C F, p 177.

ACIDUM BENZOICUM. Benzoic Acid. $HC_7H_5O_2$. "An organic acid, usually obtained from benzoin by sublimation or prepared artificially, chiefly from toluol." <U. S., p 7. <F C F, p 57, 182.

Soluble in about 500 parts of water or 2 parts of alcohol, 3 parts of ether, 7 parts of chloroform. Begins to sublime at 100° C. Melts at 121.4° C. It unites feebly with some bases forming *benzoates*.

ACIDUM BORICUM. Boric Acid. Boracic Acid. H_3BO_3. <U. S., p 8. F C F, p 57, 198.

Soluble at N T in 25.6 parts of water, or 15 parts of alcohol, or 10 parts glycerin.

It unites with some basic substances, chiefly sodium, with which it combines making the borax of commerce.

ACIDUM CARBOLICUM. Carbolic Acid. Phenol. C_6H_5OH. "A constituent of coal-tar, obtained by fractional distillation and subsequently purified." <U. S., p 9. F C F, p 56, 57, 672.

Soluble in about 15 parts of water, very soluble in alcohol and glycerin. It unites feebly with some bases but chiefly in combination with some other acid, making ——carbolates.

ACIDUM CARBOLICUM CRUDUM. Crude Carbolic Acid. "A liquid consisting of various constituents of coal-tar, chiefly cresol and phenol, obtained by fractional distillation." <U. S., p 10. F C F, p 59, 673.

It is used chiefly as a disinfectant and deodorizer.

ACIDUM CHROMICUM. Chromic Acid. CrO_3. The only change is the addition of the supplementary titles, CHROMIC TRIOXIDE, CHROMIC ANHYDRIDE. <U. S., p 10. F C F, p 57, 239

Chromic acid is delequescent in moist air, and must be kept in g. s. glass bottles. It is very soluble in water, and decomposes readily with alcohol, ether, glycerin, if undiluted sometimes causing violent explosion. It unites with some bases forming *chromates*.

ACIDUM CITRICUM. Citric Acid. $H_3C_6H_5O_7+H_2O$. "An organic acid usually prepared from lemon juice." <U. S., p 11. F C F, p 67.

Soluble in 0.63 part of water, and in 1.61 parts of alcohol. It unites with bases forming *citrates*.

ACIDUM GALLICUM. Gallic Acid. $HC_7H_5O_5+H_2O$. "An organic acid usually prepared from tanic acid." <U. S., p 12. F C F, p 57, 873.

Soluble in 100 parts of water, 5 parts of alcohol, 40 parts of ether or 12 parts of glycerin. It unites with ferric salts, but combines with but few bases.

ACIDUM HYDROBROMICUM DILUTUM. Diluted Hydrobromic Acid. "A liquid composed of 10 per cent., by weight, of absolute hydrobromic acid, (H Br), and 90 per cent. of water." <U. S., p 12. F C F, p 56, 59, 201.

Sp. gr. about 1.077 at N T. It unites with basic substances forming *bromates*. It should be remembered that *bromides* are a combination of the element bromine, with another element or an organic radical.

ACIDUM HYDROCHLORICUM, Hydrochloric Acid. MURIATIC ACID. "A liquid composed of 31.9 per cent., by weight, of absolute hydrochloric acid (H Cl), and 68.1 per cent. of water." <U. S., p 13. F C F, p 56, 60.

No change is made in this acid; sp. gr. about 1.163 at N T. It forms salts with bases, known as *chlorates*, also under the old name *muriates*. It should be re-

membered that *chlorides* are combinations of the element chlorine with other elements or organic radicals.

ACIDUM HYDROCHLORICUM DILUTUM. Diluted Hydrochloric Acid, Diluted Muriatic Acid. The only change in the new Pharm. is the substitution of grammes for parts by weight. Hydrochloric acid 100 grammes (or 5 ounces by weight) mixed with water 219 grammes (or 11 ounces, nearly, by weight). <U.S., p 14.

The preparation contains 10 per cent., by weight, of absolute hydrochloric acid, the same as before; sp. gr. about 1.050, at 15° C. (59° F.). <F C F, p 60.

ACIDUM HYDROCYANICUM DILUTUM. Diluted Hydrocyanic Acid, Prussic Acid. "A liquid composed of 2 per cent., by weight, of absolute hydrocyanic acid (H C N), and 98 per cent. of water." <U. S., p 14.

Some change is made in the proportions of the ingredients used in making this preparation, but the resultant product is the same. As it is seldom made by pharmacists it is unnecessary to repeat the formula. <F C F, p 56, 61, 267.

ACIDUM HYPOPHOSPHOROSUM DILUTUM. Diluted Hypophosphorous Acid. "A liquid composed of about 10 per cent., by weight, of absolute hypophosphorous acid (HPH_2O_2) and about 90 per cent. of water." <U. S., p 15. *new.*

A colorless liquid having an acid taste. Specific gravity about 1.046, at N. T. Although this is newly introduced into the Pharm. it has been considerably used as an ingredient of solutions and syrups of hypophosphites for many years. It combines with bases forming salts known as *hypophosphites*. <F C F, p 61.

ACIDUM LACTICUM. Lactic Acid. "An organic acid usually obtained by subjecting milk-sugar or grape-sugar to lactic fermentation; composed of 75 per cent., by weight, of absolute lactic acid ($HC_3H_5O_3$), and 25 per cent. of water." <U. S., p 16. F C F, p 56, 62, 542.

The sp. gr. of this acid is 1.213 at N T. It is employed in making the official syrup of calcium lactophosphate, and in several unofficial preparations. It combines with bases to form salts known as *lactates*.

ACIDUM NITRICUM. Nitric Acid. The present Pharm. changes the percentage strength of nitric acid to 68 per cent. of absolute nitric acid, instead of 69.4 per cent. as in 1880. The sp. gr. is correspondingly changed from 1.420 to 1.414. <U. S., p 17. F C F, p 56, 62, 636.

This change is desirable as it was very difficult to obtain in the market nitric acid which would correspond with the former standard. It must however be noted that a corresponding change occurs in its combining proportions, and all calculations of the new Pharm. are made on the new bases of strength. It forms salts with bases, known as *nitrates*.

ACIDUM NITRICUM DILUTUM. Diluted Nitric Acid. The present preparation is the same in absolute acid strength (10 per cent.) as in the 1880 P., but the present acid strength of nitric acid being a little less, more is required. Nitric acid 100 gm. (or 2½ fl. ounces), distilled water 580 gm. or 14½ fl.ounces. <U. S., p 17. F C F, 56, 63.

Sp. gr. at N. T. about 1.057.

ACIDUM NITROHYDROCHLORICUM. Nitrohydrochloric Acid, Nitromuriatic Acid. The new Pharm. directs nitric acid 180 Cc. hydrochloric acid, 820 Cc. to be mixed together in a capacious glass vessel. <U. S., p 18. F C F, p 63.

This is equivalent to 1⅛ fl.ounces of nitric acid with 5⅛ fl.ounces of hydrochloric acid. When the lower acid strength of the present nitric acid is taken into account with the increased proportion of hydrochloric acid, it makes about 20 per cent. more of the latter than in the 1880 formula, which was 4 to 15 or 1⅓ fl. ounces of nitric to 5 of hydrochloric.

ACIDUM NITROHYDROCHLORICUM DILUTUM. Diluted Nitrohydrochloric Acid. Diluted Muriatic Acid. < U. S., p 18. F C F, p 63. The present Pharm. directs nitric acid 40 Cc., hydrochloric acid 180 Cc., distilled water 780 Cc.; the acids to be mixed in a capacious vessel and, after effervescense has ceased the water added.

This is in the proportion of nitric acid 1 fl.ounce, hydrochloric acid 4½ fl.ounces distilled water 19½ fl.ounces, making a preparation, (if made with the 1890 official acids) containing 25⅔ per cent., by weight, of the mixed acids. As the 1880 preparation contained 4 parts, by weight, of nitric acid, (1.4 per cent. stronger), 15 parts of hydrochloric acid (of the same strength), and 76 parts of water; the finished preparation contained about 23½ per cent., by weight, of the mixed acids. The present preparation is, therefore, slightly increased in acid strength, containing about 11.8 per cent. of absolute acid.

ACIDUM OLEICUM. Oleic Acid. $HC_{18}H_{33}O_2$. "An organic acid prepared in a sufficiently pure condition by cooling commercial oleic acid to about 5° C. (41° F.), then separating and preserving the liquid portion." <U. S., p 18. F C F, 56, 64, 637, 655

The sp. gr. of oleic acid is about 0.900 at N T. It is used in pharmacy for making oleates, three of which are now official. It combines with metallic bases and alkaloids, forming oleates, but not with salts of metals or alkaloidal salts.

ACIDUM PHOSPHORICUM. Phosphoric Acid. "A liquid omposed of not less than 85 per cent., by weight, of absolutec orthophosphoric acid (H_3PO_4) and not more than 15 per cent. of water." <U. S., p 19.

In this preparation the important change in acid strength from 50 per cent. 1880, to 85 per cent., the present standard must be

closely observed. This change effects all the preparations in which phosphoric acid is a constituent and the new acid when purchased should be labelled *Phosphoric Acid, 85 per cent. 1890-93.*

The sp. gr. of the present official acid is not below 1.710 at N T, and it should require not less than 17 Cc. of normal potassium hydrate V. S., (each Cc. corresponding to 5 per cent. of the absolute acid) to neutralize 0.978 gm. of the acid diluted with water, phenolph alein being used as indicator. This acid is the same as the 1880 preparation, concentrated by evaporation at a gentle h·at, a large part of its water being vaporized. Phosphoric acid unites with bases forming salts called *phosphates.*

ACIDUM PHOSPHORICUM DILUTUM. Diluted Phosphoric Acid. The present Pharm. directs phosphoric acid (85 per cent.) 120 gm. (or 2 ounces, by weight,); distilled water 750 gm. (or 15 ounces, by weight), to make 850 gm. (or 17 ounces, by weight). The absolute acid strength of this preparation is the same as in the 1880 Pharm., 10 per cent. Its sp. gr. is about 1.057 at N. T.

Particular attention must be observed in making this preparation to know the standard of acid strength from which it is prepared. If the 1880 50-per cent. acid is used, follow the old formula, 2 parts or ounces, by weight, with 8 parts or ounces of distilled water. <U. S., p 20. F C F, p 56, 72.

ACIDUM SALICILICUM. Salicylic Acid. $HC_7H_5O_3$. "An organic acid existing in combination in various plants, but more largely prepared synthetically from carbolic acid." <U. S., p 20. F C F, p 57, 736.

It is soluble in about 450 parts of water or 2.4 parts of alcohol. This acid still retains its place as the best preservative agent of aqueous and saccharine solutions. The addition of a small percentage of salicylic acid, in making the official or other syrups designed to be kept for some time prevents their change. 5 grains dissolved in the water required to make a quart or a litre of syrup is sufficient. Double the quantity is required to keep fruit juices and aqueous preparations. It unites feebly with some basic substances forming *salicylates.*

ACIDUM STEARICUM. Stearic Acid. $HC_{18}H_{35}O_2$. "An organic acid, in its commercial, more or less impure form, usually obtained from the more solid fats, chiefly tallow." *new.* <U. S., p 21. F C F, p 637.

This is for the first time made official, because of its use in making glycerin suppositories. It has, however, been used in pharmacy, for some time, for various purposes, and, known as stearin, has been extensively employed for making candles, &c. It is insoluble in water, soluble in about 45 parts of alcohol at N T, readily soluble in boiling alcohol and ether. It melts when pure at 69.2 C. (133.8 F.); the ordinary stearin of commerce melts at about 56°C. (138.8 F.). Stearic acid unites with many bases forming *stearates.* In combination with oleic acid as found in fats, it is the principle ingredient of most of the hard soaps of commerce.

ACIDUM SULPHURICUM. Sulphuric Acid. "A liquid composed of not less than 92.5 per cent., by weight, of absolute sulphuric acid (H_2SO_4) and not more than 7.5 per cent. of water." <U. S., p 21. F C F, p 56, 73, 781.

In this preparation the standard of acid strength is lowered from 96 per cent. as in the 1880 Pharm. probably because it was difficult to obtain in the general market an acid so highly concentrated. The sp. gr. of the present standard is not below 1 835 at N T. This requires a corresponding change in all preparations in which it is directed, as the 92.5 per cent. acid is now assumed in all pharmacopœial formulas. Commercial sulphuric acid is considerably below this standard in acid strength. It unites with most basic substances forming *sulphates*.

ACIDIUM SULPHURICUM AROMATICUM. Aromatic Sulphuric Acid. Elixir of Vitriol. The present formula is almost identical in medicinal activity and composition with the 1880 preparation. Sulphuric acid 100 Cc. (or 1½ fl.ounces); tincture of ginger 50 Cc. (or ¾ fl.ounce); oil of cinnamon 1 Cc. (or 7 drops); alcohol a sufficient quantity to make 1000 Cc. (or 15 fl.ounces). The directions for making are the same except that great caution is directed in adding the acid to the alcohol.

It seems strange that this preparation was not in this revision with the tinctures. Its sp. gr. is about 0.936 at N T, and it contains 20 per cent. by weight of the present official sulphuric acid. <U. S., p 22. F C F, p 73.

ACIDUM SULPHURICUM DILUTUM. Diluted Sulphuric Acid. This preparation is made of the same acid strength as in the 1880 Pharm. Sulphuric acid 100 gm. (or 2 ounces, by weight); distilled water 825 gm. (or 16½ ounces by weight,) making 925 gm. (or 18½ ounces) containing 10 per cent by weight of absolute Sulphuric Acid.

The sp. gr. should be 1.070 at N T, if made with the acid now official. <U. S., p 23. F C F, p 56, 74.

ACIDUM SULPHUROSUM. Sulphurous Acid. "A liquid composed of not less than 6.4 per cent by weight of Sulphurous Acid Gas, (Sulphur Dioxide, SO_2) and not more than 93.6 per cent of water." <U. S. 1890, p 23. The 1880 preparation contained only 3.5 per cent of Sulphurous Acid.

The ingredients used are the same but differ in quantity, and the resultant preparation as will be seen is nearly *double* the acid strength of the former. It is made by generating sulphurous acid gas by mixing sulphuric acid 80 Cc, with charcoal, in coarse powder 20 gm. contained in a glass flask of about 500 Cc. capacity, by means of heat, and conducting it through a wash bottle containing distilled water kept cool by surrounding it with ice, until the evolution of gas has nearly ceased. The gas is absorbed by distilled water. The present product should have sp. gr. 1.035 at N T. This acid is seldom prepared by druggists, but when used its strength should be known. <Pharmacopœia test of strength. F C F, 56, 74, 781.

ACIDUM TANNICUM. Tannic Acid. GALLOTANNIC ACID, DIGALLIC ACID. $HC_{14}H_9O_9$. "An organic acid obtained from nutgall." <U. S., p 24. F C F, 57, 873.

The two supplementary titles, gallotannic acid, and digallic acid have been added. Soluble at N T, in about 1 part of water or glycerin and in about 0.6 part alcohol. Note the slight change in the chemical percentage formula to H_9 instead of H_{10} as formerly. Combines with many bases and organic radicals forming *tannates*.

ACIDUM TARTARICUM. Tartaric Acid. $H_2C_4H_4O_6$. "An organic acid usually prepared from argols." <U. S., p 25. F C F, 57, 703.

Soluble in about 0.8 part of water and in 2.5 parts of alcohol at N T. This acid combines with basic substances, forming salts known as *tartrates*. It is the acid constituent of cream tartar.

ADEPS. Lard. "The prepared internal fat of the abdomen of *sus scrofa*, purified by washing with water, melting and straining." U. S., p 26.

The manner of preparing lard is the same as has been heretofore directed, but it is seldom prepared in this manner by druggists, the commercial article being used instead. Preparations in which lard is an ingredient *should* be freshly made from lard, purified as directed. <F C F, p 75.

ADEPS BENZOINATUS. Benzoinated Lard. The present formula is the same as the 1880 except in the substitution of metric weight for parts. Lard 1000 gm. (or 1 pound av.), benzoin 20 gm. (or 140 grains). <U. S., p 26.

The benzoin in coarse powder is tied in a coarse muslin bag, and steeped by the heat of a water bath, in the melted lard, with frequent stirring and squeezing for two hours; add 5 per cent. or more of white wax in warm weather. <F C F, p 76.

ADEPS LANÆ HYDROSUS. Hydrous Wool-Fat. LANOLIN. "The purified fat of sheep, *Ovis Aries* Linnè, mixed with not more than 30 per cent. of water." <U. S., p 27. *new.*

Under the name lanoline, *aginine*, *oleum lanae* and various other proprietary titles this preparation has been introduced and is still furnished, as there is none other than proprietary preparations to be found in the market. It melts at about 40°C. (104°F.), and is considerably used as in ointment bases, being in favor because of its property of holding aqueous solutions in combination.

ÆTHER. Ether. (ÆTHER FORTIOR PHARM. 1880). "A liquid composed of about 96 per cent., by weight, of absolute ether or ethyl oxide $(C_2H_5)_2O$, and about 4 per cent. of alcohol containing a little water." <U. S., p. 27.

An important change has been made in the new Pharm. by dismissing the ÆTHER (74 per cent.) of the 1880 P., and putting under the same title the ÆTHER FORTIOR or stronger ether of the 1880 P. This is liable to lead to some confusion at first although it may be remarked that the majority of druggists and physicians have not well understood the difference in the preparations, even if they have

known that there were two official strengths. The present official ether is 2 per cent. stronger of ethyl oxide than the stronger ether of the former revision; its sp. gr. 0.725 to 0.728 at N. T. or 0.714 to 0.717 at 25°C. (77°F.). <F C F, p 78.

ÆTHER ACETICUS. Acetic Ether. "A liquid composed of about 98.5 per cent., by weight, of ethyl acetate, $C_2H_5C_2H_3O_2$, and about 1.5 per cent. of alcohol containing a little water." <U. S., p 28.

The sp. gr. of acetic ether is 0.893 to 0.895 at N. T. <F. C. F. 78, 79.

ALCOHOL. Alcohol. "A liquid composed of about 91 per cent., by weight, or 94 per cent, by volume, of ethyl alcohol (C_2H_5OH), and about 9 per cent., by weight, of water." <U. S., p. 28.

Alcohol remains unchanged in the new Pharm., sp. gr. 0.820 at 15°C. (59°F.), or 0.812 at 25°C. (77°F.), corresponding with commercial alcohol. The general characteristics, properties, and tests of alcohol are so well known and explained in text-books, that further comment is unnecessary. <F. C. F., p 86.

ALCOHOL ABSOLUTUM. Absolute Alcohol. C_2H_5OH "Ethyl alcohol containing not more than 1 per cent., by weight, of water." <U. S., p. 29, *new*.

Although absolute alcohol has for a long time been a common article of druggist's stock, it has not heretofore been made official. It differs from the alcohol of commerce only in being more highly concentrated, its sp. gr. being 0.797 at N. T. or 0.789 at 25°C. (77°F.) <F. C. F. p. 87.

ALCOHOL DODORATUM. Deodorized Alcohol. "A liquid composed of about 92.5 per cent. by weight, or 95.1 per cent by volume, of ethyl alcohol (C_2H_5OH) and about 7.5 per cent., by weight, of alcohol." <U. S., p. 29, *new*.

This preparation is known commercially as *Cologne Spirit* or *Spirits*, and is extensively sold to rectifiers for mixing cheaper grades of liquors, as well as to perfumers and druggists who wish an alcohol free from odor. The distillers sell this by proof gallons, (the proof being generally the same as alcohol, 188), while alcohol is sold by wine gallons, the Pharm. sp. gr. is 0.816 at N. T., but it is probable that the commercial article would be the same sp gr., proof and percentage as alcohol. <F. C. F., p. 88.

ALCOHOL DILUTUM. Diluted Alcohol. "A liquid composed of about 41 per cent., by weight, or about 48.6 per cent., by volume, of absolute ethyl alcohol, C_2H_5OH, and about 59 per cent. of water." <U. S., p. 30. F. C. F, p 90.

This is prepared by mixing 500 Cc. (or 1 pint) of alcohol with 500 Cc. (or 1 pint) of water.

"If the two liquids be measured (500 Cc. each) at the temperature of 15.6°C (60°F.), the mixture, when cooled to the same temperature, will measure about 971 Cc." The loss of volume occurs from

the new molecular arrangement of the liquids making a contraction of about 3 per cent.

If it is desired to mix the liquids by weight, take alcohol 410 grammes, and distilled water 500 grammes.

The present standard makes the sp. gr. of alcohol about 0.936 at N. T. or about 0.937 at 15.6°C. (60°F.). or about 0.930 at 25°C. (77°F.). The sp. gr. of the former revision was 0.928 at 15.6°C. (60°F.), and 0.920 at 25°C. (77°F.). The present preparation contains 4½ per cent. less of absolute alcohol than the former.

For making alcohol of any percentage of strength see U. S., p. 30, F.C.F., p. 89

It will be seen that this change in the percentage strength of diluted alcohol, from equal parts by weight in the 1880 to equal parts by volume of alcohol and water as in the present (1890) Pharm. is the most important of any change introduced, because it affects a larger number of preparations or formulas than any other. On the other hand it may be stated that only a limited number of the great body of druggists in this country ever followed the formula of the 1880 P. for making diluted alcohol, equal parts by weight but, instead, when diluted alcohol was directed mixed equal volumes of alcohol and water as had always been the custom before the advent of the sixth revision. If this is a fact, (which we firmly believe it to be), it shows how reluctant druggists are to adopt new methods or changes in formulas unless the gain is readily apparent.

ALOE BARBADENSIS. Barbadoes Aloes. "The inspissated juice of the leaves of *Aloe vera*." <U. S., p 31. *new.*

Socotrine aloes, only, was official in the 1880 revision, although Barbadoes aloes was formerly official in the U. S. P., and has been a common article of drug stock for a long time. <F C F, p 135.

ALOE PURIFICATA. Purified Aloes. The present Pharm. directs Socotrine aloes 1000 gm. (or 10 ounces); alcohol 200 Cc. (or 2 fl.ounce). The manipulation is the same as in the 1880 Pharm., and the resultant preparation is the same as formerly. <U. S., p 31. F C F, p 135.

ALOE SOCOTRINA. Socotrine Aloes. "The inspissated juice of the leaves of *Aloe Perryi*." <U. S., p 32.

This is the most commonly used of the official aloes. It was the only official aloes of the 1880 Pharm., but in the present revision Barbadoes aloes has been added. It will therefore be necessary for physicians or others who direct aloes in formulas to specify the kind desired, otherwise either may be used. <F C F, p 135.

ALOINUM, Aloin. "A neutral principle obtained from several varieties of aloes, chiefly Barbadoes aloes (yielding Barbaloin), and Socotra or Zanzibar aloes (yielding Socalin)—differing more or less in chemical composition and physical properties according to the source from which it is derived." <U. S., p 32. *new.*

Aloin was official in the Br. Pharm. of 1885 which gave it the chemical formula $C_{16}H_{18}O_7$. Soluble in 60 parts of water or 20 parts of alcohol at N. T. It is considerably used in pills, and powders, the dose (Br. P.) being ½ to 2 grains; but this is larger than is usually prescribed. <F C F, p 136.

ALUMEN. Alum. Potassium Alum, Aluminum and Potassium Sulphate. $Al_2K_2(SO_4)_4+24H_2O$. <U. S., p 33.

The only change in this is the change of spelling of Aluminum, to correspond with the present official title of the element. It should be noted that the alum most commonly found in the market is ammonia alum, instead of the official potassium alum. Soluble in 9 parts of water at N T., or in 0.3 part of boiling water. <F C F, p 137.

ALUMEN EXSICCATUM. Dried Alum. Alumen Ustum. Burnt Alum. $Al_2K_2(SO_4)_4$.

The present Pharm. directs 100 gm. of alum in small pieces to be placed in a shallow porcelain capsule on a sand bath and heat applied until it liquifies. The heat is then continued moderately with constant stirring until aqueous vapor ceases to be disengaged, and a dry, white, porous mass is obtained weighing 55 gm. The former Pharm. directed 184 parts of alum to be reduced to 100 parts, in a somewhat similar manner. The proportion of the product to the amount taken is the same. Very slowly but completely soluble in 20 parts of water at N T. and quickly soluble in 0.7 part of boiling watar. <U. S., p 33. F C F, p 138.

ALUMINI HYDRAS. Aluminum Hydrate. Aluminum Hydroxide, Hydrated Alumina. $Al_2(OH)_6$.

Note the change made in spelling of alumini and aluminum, and the additional title Aluminum Hydroxide, in the present revision. The proportions are also changed to alum 100 gm., sodium carbonate 100 gm., instead of alum 11 parts, sodium carbonate 10 parts. The method of preparing and the resultant preparation are the same. Insoluble in water or alcohol. <U. S., p 34. F C F, 139.

ALUMINI SULPHAS. Aluminum Sulphate. $Al_2(SO_4)_2+16HO_2$.

Note the change of spelling in both the Latin and English title, corresponding with the present spelling of Aluminum. Soluble in 1.2 parts of water at N T., but insoluble in alcohol. <U. S., p 35. F C F, p 139.

AMMONII BENZOAS. Ammonium Benzoate. $NH_4C_7H_5O_2$.

No change in this preparation. Soluble in 5 parts of water at N T. and in 28 parts of alcohol. <U. S., p 35. F C F, 145.

AMMONII BROMIDUM. Ammonium Bromide. NH_4Br.

No change in this preparation. Soluble in 1.5 parts of water at N T. and in 30 parts of alcohol. <U. S., p 36. F C F. 145.

AMMONII CARBONAS. Ammonium Carbonate. NH_4HCO_3. $NH_4NH_2CO_2$.

No change in this preparation. It is slowly but completely soluble in about 5 parts of water at N T., decomposed by hot water; alcohol dissolves the carbamate, and leaves the acid carbonate. <U. S., p 36. F C F, p 145.

AMMONII CHLORIDUM. Ammonium Chloride. NH_4Cl.

No change in this preparation. Soluble in 3 parts of water at N T. and in 1 part of boiling water, almost insoluble in alcohol. It is commonly known as "sal ammoniac," or "muriate of ammonia." <U. S., p 37. F C F, p 146.

AMMONII IODIDUM. Ammonium Iodide. NH_4I.

No change in this preparation. Soluble in 1 part of water and in 9 parts of alcohol at N T. <U. S., p 38. F C F, p 147.

AMMONII NITRAS. Ammonium Nitrate. NH_4NO_3.

No change in this preparation. Soluble at N T. in 0.5 part of water and in 20 parts of alcohol. Used in making laughing gas. <U, S., p 38. F C F, p 147.

Ammonium Phosphate and **Ammonium Sulphate** which were official in the 1880 Pharm. are now dismissed.

AMMONII VALERIANAS. Ammonium Valerianate. $NH_4C_5H_9O_2$.

No change in this preparation. Very soluble in water and alcohol, deliquesces in moist air. <U. S., p 39. F C F, p 148.

AMYL NITRIS. Amyl Nitrite. "A liquid containing about 80 per cent. of amyl (principally Iso-amyl) nitrite, $C_5H_{11}NO_2$, together with variable quantities of undetermined compounds." <U.S., p 40

This preparation is the same as heretofore. It should be kept in dark amber-colored glass-stoppered vials in a cool place remote from lights or fire. As it is very volatile it escapes unless kept closely stopped. Sp. gr. at N. T. 0.870 0.880. <F C F, p 152.

AMYLUM. Starch. "The fecula of the seed of *Zea Mays*." <U. S., p 40.

It will be noted that the present official is corn starch, from *Zea Mays*, while the former revision authorized wheat starch, from *Triticum vulgare*. F C F, p 152.

Amylum Iodatum, Iodized Starch which was official in the 1880 revision has been dismissed.

ANTIMONII ET POTASSII TARTRAS. Antimony and Potassium Tartrate. TARTAR EMETIC, TARTRATED ANTIMONY. $2K(SbO)C_4H_4O_6+H_2O$.

This has been changed only by the addition of the supplementary title *Tartrated Antimony*, which was official in the Br. P. It is soluble in about 17 parts of water at N T., and in 3 parts of boiling water, but insoluble in alcohol. <U. S., p 41. F C F, p 156.

ANTIMONII OXIDUM. Antimony Oxide. ANTIMONY TRIOXIDE. Sb_2O_3.

This has been changed only by the addition of the supplementary title *Antimony Trioxide*. It is nearly insoluble in water or alcohol. <U. S., p 42. F C F, p 157.

ANTIMONII SULPHIDUM. Antimony Sulphide. ANTIMONY TRISULPHIDE. Sb_2S_3.

The only change in this is the addition of the supplementary title *Antimony Trisulphide*. It is insoluble in water or alcohol. <U. S., p 43. F C F, p 159

ANTIMONII SULPHIDUM PURIFICATUM. Purified Antimony Sulphide. PURIFIED ANTIMONY TRISULPHIDE. Sb_2S_3.

The supplementary title *Purified Antimony Trisulphide*, has been added in the new revision. The formula is practically the same as in the 1880 Pharm., antimony sulphide 100 gm. (or 10 ounces), ammonia water 50 cubic centimeters (or 5 ounces), take the place of 10 parts of the former to 5 parts of the latter by weight, but the resultant preparation is the same. Insoluble in water or alcohol. <U. S., p 43. F C F. p 158.

ANTIMONIUM SULPHURATUM. Sulphurated Antimony. KERMES MINERAL. "Chiefly antimony trisulphide, Sb_2S_3, with a small amount of antimony trioxide." <U. S., p 44.

The supplementary title, Kermes Mineral, by which this preparation has been popularly known is now officially added. The formula is practically the same as before, purified antimony 100 gm., solution of soda 1200 cubic centimeters being directed instead of 1 part of the former and 12 parts of the latter by weight. The manipulations and the resultant preparation are the same. It is insoluble in water or alcohol. <F C F, p 159.

APOMORPHINÆ HYDROCHLORAS. Apomorphine Hydrochlorate. $C_{17}H_{17}NO_2HCl$.

No change is made in this preparation. It is soluble at N T. in about 45 parts of either water or alcohol. A solution of this salt is used hypodermically to induce emesis, also in the treatment of drunkenness to cause nausea and an aversion to liquor. U. S., p 45. F C F, p 105.

Aquæ Waters. In the medicated waters of the new Pharmcopœia considerable change has been made from the formulas of the 1880 revision. The use of cotton to diffuse the oil globules, which was directed in this revision, has been discarded and Precipitated Calcium Phosphate has been adopted instead. This is designed to take the place of magnesium carbonate which was generally used previous to the 6th revision, but which was, in some preparations found objectionable. Orange flower and rose waters have now, each, two standards of strength, Aqua Hydrogenii Dioxidi, and aqua chloroformi are added. The title aqua ammoniæ, ammonia water is still retained, but in our opinion it would better have been changed to solution of ammonia as in the Br. and Continental Pharmacopœias.

AQUA. Water. $H_2O=17.96$. "Natural water in its purest attainable state." <U. S., p 46.

The equivalent only is changed to the more accurate molecular weight 17.96 instead of 18. as before.

AQUA AMMONIÆ. Ammonia Water. "An aqueous solution of ammonia, NH_3, containing 10 per cent., by weight, of the gas." <U. S., p 46.

This is the same as formerly, except that it is called ammonia water instead of water of ammonia. Sp gr. 0.960 at N T. <F C F, p 143.

AQUA AMMONIÆ FORTIOR. Stronger Ammonia Water. "An aqueous solution of ammonia, NH_3, containing 28 per cent., by weight, of the gas." <U. S., p 47.

This is the same as formerly except that it is called stronger ammonia water instead of stronger water of ammonia. Sp. gr. 0.901 at N T. <F C F, p 144.

AQUA AMYGDALÆ AMARÆ. Bitter Almond Water. The present formula is the same as the former revision except that 1 Cc. of oil of butter almond is directed to be dissolved by agitation in 999 Cc. of distilled water, instead of parts, by weight, in the same proportion. This is equivalent to 15 minims of the oil in 2 pints of distilled water. <U. S., p 47. F C F, p 163.

AQUA ANISI. Anise Water. The present formula is oil of anise 2 cubic centimeters; precipitated calcium phosphate 4 grammes; distilled water a sufficient quantity to make 1000 cubic centimeters. This is equivalent to 30 minims of oil of anise, 60 grains of precipitated calcium phosphate with sufficient distilled water to make 2 pints. The oil is triturated with the calcium phosphate, the water gradually added with constant trituration,and the preparation filtered clear. Other aromatic waters may be made in the same manner. <U. S., p 48. F C F, p 164.

AQUA AURANTII FLORUM. Orange Flower Water. The present Pharm. directs equal volumes of stronger orange flower water and distilled water to be mixed immediately before use.

This had no corresponding preparation in the former Pharm. the preparation bearing that name being made by distilling 40 parts of recent orange flowers with 200 parts of water until 100 parts passed over. As druggists could seldom obtain recent orange flowers, this preparation was seldom made by them, and they had to depend upon imported orange flower water which is now represented by the following preparation. <U. S., p 48. F C F, p 164.

AQUA AURANTII FLORUM FORTIOR. Stronger Orange Flower Water. Aqua Aurantii Florum Pharm. 1880, Triple Orange Flower Water. "Water saturated with the volatile oil of fresh orange flowers obtained as a by-product in the distillation of the oil of orange flowers." (neroly or neroli). <U. S. p 48.

This is imported triple orange flower water, which was the product intended in the sixth revision. <F C F, p 164.

AQUA CAMPHORÆ. Camphor Water. The present Pharm. directs camphor 8 grammes, (or 120 grains), alcohol 5 cubic centimeters,(or 1¼ fl.drachms), precipitated calcium phosphate 5 grammes (or 75 grains), to be tritruated together, and then enough distilled water gradually added to make 1000 cubic centimeters (or 2 pints), when filtered. <U. S., p 48. F C F, p 165.

The quantity of alcohol now used is only sufficient to aid in pulverizing the camphor, while in the former revision enough was used to dissolve it so that it would be distributed through the solution.

AQUA CHLORI. Chlorine Water. "An aqueous solution of chlorine, Cl, containing at least 0.4 per cent. of the gas." <U. S., p 49.

The formula and manipulation of this preparation is essentially the same as in the sixth revision, the only difference being the use of metric weight and measure instead of parts by weight. The present formula is manganese dioxide 10 gm. hydrochloric acid 35 Cc., water 75 Cc., distilled water 400 Cc. The gas is generated and conducted through a wash bottle into the distilled water, It would seem more proper to class this with solutions as in the Br. P. <U. S., p 49. F C F, p 235.

AQUA CHLOROFORMI. Chloroform Water. *New.* This is newly introduced into the U. S. P., but has been for some time official in the Br P. "Chloroform, distilled water each a sufficient quantity. Add enough chloroform to a convenient quantity of distilled water contained in a dark amber-colored bottle to maintain a slight excess of the former after the contents have been repeatedly and thoroughly shaken. <U. S., p 50.

"When chloroform water is required for use pour off the needed qnantity of the solution, refill the bottle with distilled water and saturate it by thorough agitation taking care that there be always an excess of chloroform present." The Br. P. directs 1 fl.drachm of chloroform to be shaken with 25 fl.ounces of distilled water. The dose is ½ to 2 fl.drachms. <F C F, 166.

AQUA CINNAMOMI. Cinnamon Water. The new Pharm. directs oil of cinnamon 2 Cc. (or 30 minims), precipitated calcium phosphate 4 gm. (or 60 grains) to be triturated together, and distilled water gradually added with continued trituration to make 1000 Cc. (or 2 pints) of the water when filtered clear. <U. S., p 50. F C F, p 166.

AQUA CREOSOTI. Creosote Water. The formula of the new Pharm. is the same as before, except that metric measure is directed instead of parts by weight, creosote 10 Cc. (or 1 fl.drachm) distilled water 990 Cc. (or 12⅜ fl.ounces), to be agitated vigorously together and filtered through a well wetted filter paper. <U. S., p 50. F C F, 167.

Note the change of spelling—Creasote 1880. Creosote 1890.

AQUA DESTILLATA. Distilled Water. H_2O.

The only change to be noted in this is the directions to collect the first 100 volumes and throw away, instead of 50 parts or volumes as in the former directions. <U. S., p 50. F C F, p 167.

AQUA FŒNICULI. Fennel Water. The new formula is oil of fennel 2 Cc. (or 30 minims), precipitated calcium phosphate, 4 gm. (or 60 grains), to be triturated together and distilled water grad

ually added with continued trituration to make 1000 Cc. (or 2 pints) of the water when filtered clear. <U. S., p 51. F C F, p 167.

AQUA HYDROGENII DIOXIDI. Solution of Hydrogen Dioxide. SOLUTION OF HYDROGEN PEROXIDE. "A slightly acid aqueous solution of hydrogen dioxide, H_2O_2, containing when freshly prepared about 3 per cent., by weight, of the pure dioxide, corresponding to about 10 volumes of available oxygen." <U. S., p 51. *new.*

The formula for this preparation requires greater care in manipulation than most formulas which druggists prepare; therefore our readers are referred to the new Pharmacopœia for complete working directions. E. R. Squibb, of Brooklyn, also furnishes complete outfit and instruction for making this solution. But as the process is quite complicated most druggists are content to purchase it already prepared. In our opinion this preparation belongs with the solutions instead of the waters. <F C F, p 188, 589.

AQUA MENTHÆ PIPERITÆ. Peppermint Water. The present formula is oil of peppermint, 2 Cc. (or 30 minims), precipitated calcium phosphate 4 gm. (or 60 grains), to be triturated together and distilled water gradually added with continued trituration to make 1000 Cc. (or 2 pints) of the water when filtered clear. <U. S., p 54. F C F, p 169.

AQUA MENTHÆ VIRIDIS. Spearmint Water. The present formula is oil of spearmint 2 Cc. (or 30 minims), precipitated calcium phosphate 4 gm. (or 60 grains), to be triturated together and distilled water gradually added with continued trituration to make 1000 Cc. (or 2 pints) of the water when filtered clear. <U. S., p 54. F C F, p 169.

AQUA ROSÆ. Rose Water. The present Pharm. directs equal volumes of stronger rose water and distilled water to be mixed immediately before use.

This had no corresponding preparation in the former Pharm., the preparation bearing that name being made by distilling 40 parts of recent Pale Rose with 200 parts of water until 100 parts were recovered. The official preparation was seldom made by druggists, the imported triple rose water being used, and diluted as is now directed. <U. S., p 54. F C F, p 170.

AQUA ROSÆ FORTIOR. Stronger Rose Water. AQUA ROSÆ PHARM. 1880, TRIPLE ROSE WATER. "Water saturated with the volatile oil of rose petals, obtained as a by-product in the distillation of oil of rose." <U. S., p 54.

This is the imported Tripie Rose water, which was the product intended to be official in the sixth revision. <F C F, p 170.

ARGENTI CYANIDUM. Silver Cyanide. $AgCN$.

There is no change in this chemical salt. It is seldom used except for the preparation of Dilute Hydrocyanic Acid. It is very insoluble, but by heat gives off cyanogen gas. It is decomposed by hydrochloric acid freeing its cyanogen gas. <U. S., p 55. F C F, p 172.

ARGENTI IODIDUM. Silver Iodide. AgI.

No change in this preparation; it is seldom used. It is very insoluble. <U. S., p 55. F C F, p 173.

ARGENTI NITRAS. Silver Nitrate. $AgNO_3$.

This preparation remains the same as formerly. It is the most used of any of the silver salts, being an ingredient of hair dyes, and pills and, in other forms, used as a caustic. Soluble at N T. in 0.6 parts of water. <U. S., p 55. F C F, p 173,

ARGENTI NITRAS DILUTUS. Diluted Nitrate of Silver. MITIGATED CAUSTIC. The supplementary title mitigated caustic is added. The formula of this preparation is changed to ⅓ strength nitrate of silver instead of ½ strength as in the 1880 Pharm. The present formula is silver nitrate 30 grammes (or 30 grains) potassium nitrate 60 grammes (or 60 grains). The salts are melted together in a porcelain crucible at as low a temperature as possible, stirring the melted mass well until it flows smoothly, then cast it into suitable moulds. <U. S., p 56. F C F, p 174.

This corresponds with the Br. P. formula; used chiefly as a caustic.

ADGENTI NITRAS FUSUS. Moulded Silver Nitrate. LUNAR CAUSTIC.

The supplementary title *Lunar Caustic* is added. The formula is the same as before, metric weight being directed instead of parts. Silver nitrate 100 gm. (or 1 ounce av.), hydrochloric acid 4 gm. (or 16 minims). They are melted together at a low temperature and the melted mass poured into suitable moulds. Used in the stick as a caustic. Soluble (mostly) in 0.6 parts of water. <U. S., p 57. F C F, p 174.

ARGENTI OXIDUM. Silver Oxide. Ag_2O.

Same as before, very slightly soluble in water and insoluble in alcohol. <U. S., p 57. <F C F, p 175.

ARSENI IODIDUM. Arsenic Iodide. AsI_3.

Note the change of spelling, by the omission of the final i in the Latin title; it was arsenii in the 1880 Pharm. otherwise it remains unchanged. Soluble at N T. in 7 parts of water and in about 30 parts of alcohol. <U. S., p 58. F C F, p 178.

ATROPINA. Atropine. $C_{17}H_{23}NO_3$. "An alkaloid obtained from belladonna. As it occurs in commerce it is always accompanied by a small proportion of hyoscyamine, extracted along with it from which it cannot be readily separated." <U. S., p 60.

Soluble at N T. in 130 parts of water, 3 parts of alcohol, 16 parts of ether. 4 parts of chloroform and about 50 parts of glycerin. The more soluble sulphate is generally used for solutions. <F C F, p 105.

ATROPINÆ SULPHAS. Atropine Sulphate. $(C_{17}H_{23}NO_3)_2 H_2SO_4$.

This salt of atropine is soluble in 0.4 part of water and 6.2 parts of alcohol, very insoluble in ether and chloroform. When solutions of atropine are required this salt is generaly directed in preference to dissolving the alkaloid by the addition of a little acid, as excess of acid is thereby avoided. This is much used in ophthalmic practice. <U. S., p 60. F C F, p 106.

AURI ET SODII CHLORIDUM. Gold and Sodium Chloride. "A mixture of equal parts, by weight, of dry gold chloride $AuCl_3$ and sodium chloride NaCl." <U. S., p 61.

This preparation remains unchanged. It is very soluble in water, and unless closely stopped becomes moist and deliquesces slightly. The alleged use of this salt in treatment for drunkenness has lately brought it into considerable prominence. The dose internally is $\frac{1}{12}$ to $\frac{1}{4}$ grain. Also used by hypodermic injection. <F C F, p 179.

BARII DIOXIDUM. Barium Dioxide. Barium Peroxide. BaO_2. "Commercial, anhydrous barium dioxide." This preparation is made official because of its use in making aqua hydrogenii dioxide,(solution of hydrogen peroxide). <U. S., p 63. F C F, p 188.

"Almost insoluble in cold water, with which, however, it forms a definite hydrate, and to which it imparts a decidedly alkaline reaction. Hydrochloric phosphoric, and most other mineral acids decompose it, producing the corresponding barium salts, and hydrogen dioxide which remains in solution for a considerable time, if the reaction has taken place in the cold an excess of the acid is present."

BENZINUM. Benzin. Petroleum Benzin, Petroleum Ether. "A purified distillate from American petroleum consisting of hydro-carbons, chiefly of the marsh-gas series (C_5H_{12},C_6H_{14}), and homologous compounds." <U. S., p 64.

Sp. gr. at N T. 0.670 to 0.675. Boiling 50° to 60°C. (122° to 140° F). Very inflammable. This, more properly corresponds with the gasoline of commerce. Commercial benzine, made from petroleum, being of higher sp. gr. and much stronger odor. <F C F, p 189, 671.

BISMUTH/ CITRAS. Bismuth Citrate. $BiC_6H_5O_7$. The formula for this preparation remains unchanged in the new Pharm. except by the substitution of metric weight for parts. The present formula being bismuth subnitrate 100 gm. (or 10 ounces), citric acid 70 gm. (or 7 ounces), distilled water a sufficient quantity. See directions for making. <U. S., p 64. F C F, p 193.

It is insoluble in water or alcohol, but soluble in ammonia water and in solutions of the citrates of the alkalies.

BISMUTHI ET AMMOMII CITRAS. Bismuth and Ammonium Citrate. This also remains unchanged except by the sub-

stitution of metric weight and measure for parts by weight. The present formula is bismuth citrate 100 gm., ammonia water and distilled water each a sufficient quantity. The bismuth citrate is mixed with 200 Cc. of distilled water to a smooth paste heated on a water-bath, ammonia water added to dissolve, the solution filtered, evaporated to a syrupy consistence and dried upon glass plates in scales. <U. S., p 65. F C F, p 194.

It is very soluble in water, when old requiring a little ammonia water to complete the solution, sparingly soluble in alcohol.

BISMUTHI SUBCARBONAS. Bismuth Subcarbonate.

Insoluble in water or alcohol, but soluble, with efferescence in nitric or hydrochloric acid. <U. S., p 66. F C F, p 195.

BISMUTHI SUBNITRAS. Bismuth Subnitrate.

Nearly insoluble in water and insoluble in alcohol, but readily soluble in nitric or hydrochloric acid. <U. S., p 66. F C F, p 196.

BROMUM. Bromine. Br.

A liquid element, obtained commercially from the mother liquor which remains, after the crystallization of salt in salt works. Sp gr. 2.990 at N T. Soluble in 30 parts of water, and readily soluble in alcohol or ether. Boiling point 145.4°F. It It should be carefully handled as it gives off suffocating fumes. It unites with bases forming *bromides*. <U. S., p 67. F C F, p 200.

CAFFEINA. Caffeine. THEINE. $C_8H_{10}N_4O_2+H_2O$. "A feebly basic, proximate principle, obtained from the dried leaves of *Thea sinensis*, or from the dried seeds of *coffea arabica* and found also in other plants." <U. S., p 68.

Soluble in 80 parts of water or 33 parts of alcohol at N T. The use of caffeine and its salts as a remedy for sick and nervous headache has recently brought it into considerable prominence. Dose 1 to 5 grains. <F C F, p 110.

CAFFEINA CITRATA. Citrated Caffeine. *New.* A new official prepared with caffeine 50 gm. (or 1 ounce), citric acid 50 gm. (or 1 ounce), distilled water, hot, 100 Cc. (or 2 ounces) by dissolving the citric acid in the hot distilled water, adding the caffeine and evaporating the resulting solution on a water-bath, to dryness, constantly stiring towards the end of the operation, and finally reducing the product to a fine powder and keeping it in well-stopped bottles. <U. S., p 69. F C F, 110.

This formula is identical with the Br P 1885 formula for *citrate of caffeine*, the chemical formula being given in that authority as $C_8H_{10}N_4O_2,H_3C_6H_5O_7$. It will be noted that the U. S., name does not imply that it is a true chemical salt. It makes, with 3 parts of water, a syrupy solution; but when more water is added forms a white precipitate of the alkaloid, which is, however, redissolved when about 25 parts of water are taken. The dose of this salt is from 2 to 10 grains for nervous and siek headaehe, etc. <F C F, p 110.

CAFFEINA CITRATA EFFERVESCENS. Effervescent Citrated Caffeine. *New.* The 1890 Pharm. introduces this preparation 2nd gives the following formula: Caffeine 10 gm. (or 10 grains), citric acid, 10 gm. (or 10 grains), sodium bicarbonate 330 gm. (or 330 grains), tartaric acid, 300 gm. (or 300 grains), sugar in very fine powder, 350 gm. (or 350 grains), alcohol a sufficient quantity to make 1000 gm. (or 1000 grains). The solid ingredients previously well dried, are to be reduced separately to a fine uniform powder; the powders are then to be intimately mixed and moistened with alcohol to a soft pasty mass which is to be rubbed through a No. 6 tined-iron sieve or enamelled colander. It is then to be dried and reduced to a coarse granular powder, which should be kept in well stopped bottles. <U. S., p 69.

This is a representative of a pleasant form of medicine which has become quite popular, and of which manufacturers supply quite a variety. They are usually so prepared by manufacturers, that a heaping teaspoonful will represent an average dose. This is thrown into part of a glass of cold water, stirred and drunk during effervescence. The above official preparation, is, however, so weak of the medicament (1:100) that a much larger dose would generally be required.

CALCII BROMIDUM. Calcium Bromide. $CaBr_2$.

This salt is very deliquescent and should be kept in glass-stoppered bottles. Soluble at N T. in 0.7 part of water or in 1 part of alcohol. <U. S., p 70. F C F, p 205.

CALCII CARBONAS PRÆCIPITATUS. Precipitated Calcium Carbonate. $CaCO_3$.

This is more commonly known as precipitated chalk. It is insoluble either in water, alcohol or other common media. In some dilute acids it dissolves with evolution of CO_2. <U. S., p 71. F C F, p 205.

CALCII CHLORIDUM. Calcium Chloride. $CaCl_2$. "Calcium chloride rendered anhydrous by fusion at the lowest possible temperature." <U. S., p 70.

This salt is very deliquescent when exposed to moist air and should be kept in well-stoppered bottles. It is soluble at N T. in 1.5 parts of water or in 8 parts of alcohol. Its property of absorbing moisture makes it valuable for drying gases. <F C F, p 206.

CALCIUM HYPOPHOSPHIS. Calcium Hypophosphite. $Ca(PH_2O_2)_2$.

This salt which is extensively used in making solutions and syrups of hypophosphites is soluble at N T. in 6.8 parts of water or in 6 parts of boiling water, but insoluble in alcohol. As its solubility is but slightly increased by heat, it is not generally advisable to use hot water in making up solutions of hypophosphites for preparing the syrup. <U. S., p 72. F C F, p 207.

CALCII PHOSPHAS PRÆCIPITATUS. Precipitated Calcium Phosphate. $Ca_3(PO_4)_2$.

The use of this salt as a medium for filtering aromatic waters and other substances in which the distribution of an essential oil or other ingredient is required, without solubility of the medium itself, has brought it into greater prominence in pharmacy. It is also used in making acid phosphate and other solutions. It is soluble in cold water or alcohol, but is partly decomposed by boiling water which dissolves out an acid salt. In hydrochloric, nitric and phosphoric acid it dissolves freely. <U. S., p 73. <F C F, p 207.

CALCII SULPHAS EXSICCATUS. Dried Calcium Sulphate. DRIED GYPSUM. "A powder containing about 95 per cent., by weight, of calcium sulphate ($CaSO_4$), and about 5 per cent. of water; prepared from the purer varieties of native gypsum ($CaSO_4 + 2H_2O$), by carefully heating until about three-fourths of the water has been expelled. <U. S., p 73.

This is what is commonly known as *Plaster of Paris* or calcined plaster for the first time made official in the U. S. P., although it has been official in some countries. It is now introduced because of its use in making sulphurated lime. It is soluble in about about 410 parts of water at N T., and in about 476 parts of boiling water. Insoluble in alcohol. When mixed with half its weight of water it forms first a smooth paste which rapidly hardens. It is considerably used by dentists and in surgical practice for making plaster moulds, and for cementing metal to glass, wood to stone, etc., in pharmaceutical apparatus. <F C F, p 210.

CALX. Lime. CaO. "Lime prepared by burning white marble, oyster-shells, or the purest varieties of natural calcium carbonate." <U. S., p 74.

The present Pharm. defines the source from which lime should be obtained, but druggists can seldom meet the pharmacopœia requirements in this respect, as they have generally to take what is to be found in the market. Soluble in about 750 parts of water at N T., and in about 1300 parts of boiling water, (heat lessens solubility) insoluble in alcohol. The name "Lime" was formerly, improperly given to many of the calcium salts, and is still considerably used, as Hypophosphite of Lime, (calcium), Precipitated Phosphate of Lime, (calcium), Carbonate of Lime, (calcium), Iodide of Lime, (calcium), etc. Lime is calcium oxide. <F C F, p 208.

CALX CHLORATA. Chlorinated Lime. "A compound resulting from the action of chlorine upon calcium hydrate, and containing not less than 35 per cent. of available chlorine." <U. S., p 75

This preparation which is commonly known as Bleaching Powder or Chloride of Lime is seldom found in this country sufficiently fresh to respond to the present pharmacopœial requirement of 35 per cent. of available chlorine. The 1880 U. S. P., stated that it should contain at least 25 per cent. of available chlorine, and that standard, even, is much too high for the average chloride of lime found in retail stores, as it loses by standing. It is only partially soluble in water or alcohol. <F C F, p 209.

CALX SULPHURATA. Sulphurated Lime. CRUDE CALCIUM SULPHIDE. "A mixture containing at least 60 per cent. of calcium

monosulphide (CaS), together with unchanged calcium sulphate ($CaSO_4$) and carbon in varying proportions." <U. S., p 76.

The formula of the preset Pharm. is entirely different from the preceding one. Dried calcium sulphate 70 gm., charcoal 10 gm., starch 2 gm., all in fine powder are mixed in a crucible, which is lightly covered and heated to bright redness, until the contents have lost their black color. The product is then powdered and kept in small, glass-stoppered vials. Slightly soluble in cold water, more soluble in boiling water, insoluble in alcohol. <U. S., p 76. F C F, p 209.

CAMPHORA. Camphor. $C_{10}H_{16}O$. "A stearopten (having the nature of a ketone) obtained from *cinnamomum camphora*, and purified by sublimation." <U. S., p 77.

Sp. gr. 0.995 at N T. Slightly soluble in water but very soluble in alcohol, ether, chloroform, benzin, fixed and volatile oils. It also forms liquids when rubbed in proper proportions with choral, phenol, menthol or thymol. It melts at 175°C. (347°F.), and evaporates slowly at N T. if exposed to the air. <U. S., p 77. F C F, p 727.

CAMPHORA MONOBROMATA. Monobromated Camphor. $C_{10}H_{15}BrO$.

Nearly insoluble in water, but freely soluble in alcohol, ether, chloroform and oils. Melts at 76°C. (168.8°F.). A nerve sedative in doses of 2 to 5 grains or more.

CARBO ANIMALIS. Animal Charcoal. "Charcoal prepared from bone." <U. S., p 78. F C F, p 211.

Commonly known as *bone black* or *ivory black*. Insoluble in water, alcohol or other common media.

CARBO ANIMALIS PURIFICATIS. Purified Animal Charcoal.

The method of purifying this is the same as before except that metric weight is substituted for parts by weight. <U. S., p 78. F C F, p 211.

CARBO LIGNI. Charcoal. "Charcoal prepared from soft wood and very finely powdered." <U. S., p 79. F C F, p 212.

CARBONEI DISULPHIDUM. Carbon Disulphide. CARBONEI BISULPHIDUM BISULPHIDE OF CARBON, PHARM. 1880. CS_2.

Note the change of name adopted in the new Pharm. This is a good solvent of fats, resins, etc., and is very inflammable, and very volatile. It is not made except by manufacturing chemists. Sp gr. 1.268 to 1.269 at N T. Soluble in 535 parts of water at N T. Very soluble in alcohol, ether, chloroform and oils. Boils at 46°C. (114.8°F.), <U. S., p 79. F C F, p 212.

CATECHU. Catechu. "An extract prepared from the wood of *acacia catechu*." <U. S., p 81. F C F, 727, 877.

The quality of purified catechu, known as "Black Catechu" is generally used for medicinal preparations; "cutch" is a common name for catechu of inferior quality used for dyeing. Catechu is soluble (except about 15 per cent. of insoluble

matter) to about 10 times its weight of alcohol, and with 10 times its weight of boiling water makes a turbid liquid in which a small amount of insoluble matter will settle.

CERA ALBA. White Wax. "Yellow wax bleached." <U. S., p 82. F C F, p 215.

Sp. gr. 0.965 to 0.975 at N T. Melting point about 65°C. (149°F.).

CERA FLAVA. Yellow Wax. The wax produced by the honey bee, *apis mellifica*, melted and poured into water, which allows impurities to collect on the bottom of the cake from which they can be removed by cutting or scraping off. Sp. gr. 0.955 to 0.967 at N T. Melting point 63° to 64° C. (145.4° to 147.2° F.). <F C F, p 214.

Cerata. Cerates. In this class of preparations two cerates which were official in the 1880 Pharm. are dismissed in the seventh revision. Viz: Ceratum Extracti Cantharidis, and Ceratum Sabinæ. Otherwise the preparations remain, practically, the same.

CERATUM. Cerate. No change is directed in this preparation except the substitution of metric weight for parts. White wax 300 gm. (or 3 ounces), lard 700 gm. (or 7 ounces). Melt them together and stir the mixture occasionally until it is cool. <U. S., p 83. F C F, p 218.

CERATUM CAMPHORÆ. Camphor Cerate. The formula for this preparation is entirely changed in the new revision, olive oil being omitted and white wax and lard being used instead of the cerate already prepared, as directed in the former revision. The present formula is camphor liniment 100 gm. (or 1 ounce), white wax 300 gm. (or 3 ounces), lard 600 gm. (or 6 ounces). The wax and lard are to be melted by gentle heat, the camphor liniment added while cooling and the mixture occasionally stirred until cold. <U. S., p 83. F C F, p 218.

CERATUM CANTHARIDIS. CANTHARIDES CERATE. The formula of the present Pharm. adds oil of turpentine and slightly changes the proportions of the other ingredients. It is cantharides in No. 60 powder 320 gm. (or 320 grains), yellow wax 180 gm. (or 180 grains), resin 180 gm. (or 180 grains), lard 220 gm. (or 220 grains), oil of turpentine 150 Cc. (or 160 minims). The cantharides is moistened with the oil of turpentine and set aside in a well covered vessel for 48 hours. The other ingredients, previously melted and strained, are then added and the mixture kept in a liquid condition by means of a water-bath, with occasional stirring until its weight has been reduced to 1000 gm. (or 1000 grains).

It is then removed from the bath and occasionally stirred until cool. <U. S., p 83. F C F, p 219.

CERATUM CETACEI. Spermaceti Cerate. This preparation remains the same, only the substitution of metric weight for parts. Spermaceti 100 gm. (or 2 ounces), white wax 350 gm. (or 7 ounces) olive oil 550 gm. (or 11 ounces). The wax and spermaceti are melted and the oil added, stirring until cold. <U. S., p 84. F C F, p 220.

CERATUM PLUMBI SUBACETATIS. Cerate of Lead Subacetate. GOULARD'S CERATE. This is changed only in the substitution of metric weight for parts. Solution of lead subacetate 200 gm. (or 2 ounces, by weight,), camphor cerate 800 gm. (or 8 ounces). The solution to be thoroughly mixed with the cerate by rubbing them together when wanted for use. <U. S., p 84. F C F, p 221.

CERATUM RESINÆ. Resin Cerate. BASILICON OINTMENT. The present formula is the same as before except the substitution of metric weight for parts. Resin 360 gm. (or 3½ ounces), yellow wax 150 gm. (or 1½ ounces), lard 500 gm. (or 6 ounces), to be melted together at a moderate heat, strained through muslin and allowed to cool without stirring. <U. S., p 84. F C F, p 221

CERII OXALAS. Cerium Oxalate. CEREOUS OXALATE. $Ce_2(C_2O_4)_3+9H_2O$.

The supplementary title Cereous oxalate is added in the new Pharm. It is insoluble in water, alcohol or other common media. U. S., p 85. F C F, p 226.

CETACEUM. Spermaceti. "A peculiar, concrete, fatty substance obtained from *physeter macrocephalus*." <U. S., p 85. F C F, p 226.

Sp. gr. at N T. about 0.945. Melts at about 50°C. (122 F.), and congeals near 45°C. (113°F.). Insoluble in water, nearly insoluble in cold alcohol.

Chartæ. Papers. In this class of preparations, charta cantharidis which was official in the sixth revision, is now dismissed; in the two remaining, there is no important change.

CHARTA POTASSII NITRATIS. Potassium Nitrate Paper. The only change in this is the substitution of metric weight and measure for parts. Potassium nitrate 200 gm. (or 2 ounces), is dissolved in distilled water 800 Cc. (or 8 ounces),and in this, strips of white unsized paper are immersed and then dried. <U. S., p 86. F C F, p 228.

CHARTA SINAPIS. Mustard Paper. The present Pharm. directs black mustard in No 60 powder 100 gm. (or 10 ounces),

India rubber 10 gm. (or 1 ounce), benzin, carbon disulphide each, a sufficient quantity. The mustard is percolated with the benzin until all oil is removed, then dried by exposure to air. The rubber is dissolved in a mixture of 200 Cc. each of benzine and carbon disulphide, and the dried mustard mixed with enough of the solution of rubber to make a semi-fluid magma which is applied by means of a suitable brush to one side of a piece of rather stiff well-sized paper so as to cover it completely, and allowed to dry.

The former Pharm. directed solution of gutta-percha as the varnish for applying the mustard to the paper. A surface of sixty square centimeters (or 9 square inches) should contain 4 gm. (or 60 grains) of the black mustard deprived of fixed oil. The prepared mustard paper should be dipped in warm water for a quarter of minute before applying. <U. S., p 86. F C F, p 229.

CHLORAL. Chloral. CHLORAL HYDRATE. $C_2HCl_3O+H_2O$. "A crystalline solid, composed of trichloraldehyde or chloral with one molecule of water." <U. S., p 88. F C F, p 233.

The preparation officially recognized is the crystallized, not the "crust" from of chloral. It is very soluble in water, alcohol, ether, also in chloroform, benzol, benzin, carbon disulphide and volatile oils. It forms liquids when triturated with camphor, menthol, thymol or carbolic acid. It melts at about 58°C. (136.4°F.), making a liquid of sp. gr. about 1.575.

CHLOROFORMUM. Chloroform. CHLOROFORMUM PURIFICATUM PHARM. 1880. $CHCl_3$. "A liquid consisting of 99 to 99.4 per cent., by weight, of absolute chloroform, and 1 to 0.6 per cent. of alcohol." <U. S., p 88. F C F, p 237.

As will be noted this takes the place of the purified chloroform of the 1880 Pharm. the chloroform venale or commercial chloroform, which was also official in that revision, being dismissed. The percentage of absolute chloroform is also slightly increased. Its sp. gr. should not be below 1.490 at N T. or 1.473 at 25°C. (77°F.). It is soluble in 200 times its volume of cold water and in all proportions in alcohol, ether, benzol, benzin, and oils. It boils at 60° to 61°C.(140° to 141.8°F) is not inflammable, but very volatile.

CINCHONIDINÆ SULPHAS. Cinchonidine Sulphate. $(C_{19}H_{22}N_2O)_2H_2SO_4+3_2HO$. "The neutral sulphate of an alkaloid obtained from the bark of various species of Cinchona." <U. S., p 92. F C F, 111.

It will be noted that a slight change, based upon modern determinations, is made in expressing the chemical formula of this salt. It is soluble at N T. in 66 parts of water and in 10 parts of alcohol.

CINCHONINA. Cinchonine. $C_{19}H_{22}N_2O$. "An alkaloid obtained from the bark of various species of cinchona." <U. S., p 93. F C F, p 112.

Note the change in the chemical formula, which was in the former revision $C_{20}H_{24}N_2O$. Soluble at N T. in 3760 parts of water and in 116 parts of alcohol.

CINCHONINÆ SULPHAS. Cinchonine Sulphate. $(C_{19}H_{24}N_2O)_2 H_2SO_4 + 2H_2O$.

This salt of cinchonine has one less part of water than cinchonidine, but is otherwise the same in chemical composition. It is soluble at N T. in 66 parts of water and in 10 parts of alcohol. Being more soluble in ordinary menstrua it is better to use in solutions, elixirs, etc., as a bitter cinchona tonic, than other salts of the cinchona alkaloids. <U. S., p 93. F C F, p 112.

COCAINÆ HYDROCHLORAS. Cocaine Hydrochlorate. $C_{17}H_{21}NO_4HCl$. "The hydrochlorate of an alkaloid obtained from coca." <U. S., p 95. F C F, p 113. *new.*

This much used preparation is for the first time official in the U. S. Pharm. It was official in the Br P. of 1885, at which time it was coming into general use. It is soluble at N T. in 0.48 part of water and in 3.5 parts of alcohol. It is also soluble in 17 parts of chloroform, but nearly insoluble in ether. For tests of purity etc., refer to the Pharmacopœia. In solution this salt is extensively used as a hypodermic injection to relieve neuralgia, it is also much employed in ophthalmic practice to produce local anaesthesia, and locally, in the form of ointment, liniments suppositories and other forms as an anodyne. Internally it is administered as an anodyne and intoxicant, in doses of $\frac{1}{3}$ to 1 grain or more. It has been proposed and tried as a cure for the opium habit but the remedy proves worse than the disease.

CODEINA. Codeine. $C_{18}H_{21}NO_3 + H_2O$. "An alkaloid obtained from opium." <U. S., p 96. F C F, 114, 666.

It is soluble at N T. in 80 parts of water and in 3 parts of alcohol. It is also soluble in 2 parts of chloroform or 30 parts of ether. It is sedative, but only slightly narcotic, the dose is $\frac{1}{4}$ to 1 grain.

COLLODIUM. Collodion. In the new revision metric weight and measure are directed instead of parts by weight, the proportions being slightly different. Pyroxylin 30 gm. (or 218 grains), ether 750 Cc. (or 12 fl.ounces), alcohol 250 Cc. (or 4 fl.ounces). The pyroxylin is placed in a bottle, the ether added, and allowed to stand 15 minutes, the alcohol is then added and the bottle shaken occasionally until the pyroxylin is dissolved. <U. S., p 97.

It will be observed that the directions for making differ from those of the former revision, by reversing the order of the addition of the liquids, the alcohol being added first in the 1880 Pharm. <F C F, p 241.

COLLODIUM CANTHARIDATUM. Cantharidal Collodion. Blistering Collodion. This preparation takes the place of the *collodium cum cantharide* of the 1880 revision. The name only is changed, the preparation remaining the same except that metric weight is subsituted for parts. Cantharides, in No. 60 powder, 60 gm. (or 6 ounces) is exhausted by percolating with chloroform,

(about 250 gm. or 25 ounces being required); the chloroform is then recovered, (about 200 gm. or 20 ounces) by distillation and the residue evaporated by water-bath to 15 gm. (or 1½ ounces). This is then dissolved in flexible collodion 85 gm. (or 8½ ounces) and set aside to settle clear. <U. S., p 97. F C F, p 241.

To produce a blister this is painted with a c. h, brush over the surface or part required to be blistered.

COLLODIUM FLEXILE. Flexible Collodion. This remains the same as in the former revision. Collodion 920 gm. (or 920 grains), Canada turpentine 50 gm. (or 50 grains), castor oil 30 gm. (or 30 grains), are thoroughly mixed together. <U. S., p 98. F C F, p 243.

COLLODIUM STYPTICUM. Styptic Collodion. The present formula directs metric weight and measure instead of parts by weight, as in the 1880 Pharm., but the preparation is about the same. Tannic acid 20 gm. (or 210 grains), alcohol 5 Cc. (or 50 minims), ether 25 Cc. (or 250 minims), collodion sufficient to make 100 Cc. (or 1000 minims=2 fl.ounces and 40 minims). The tannic acid, alcohol and ether are mixed together in a bottle and the collodion added. <U. S., p 98. F C F, p 243.

CONFECTIO ROSÆ. Confection of Rose. This formula is changed only by the use of metric weight and the stronger rose water of the present Pharm. Red rose, in No. 60 powder, 80 gm. (or 1 ounce), sugar in fine powder 640 gm. (or 8 ounces), clarified honey 120 gm. (or 1½ ounces), stronger rose water 160 Cc. (or 2 ounces). The red rose is rubbed with the stronger rose water heated to 65° C. 149° F.), the sugar and honey gradually added and the mixture beat together until a uniform mass results. <U. S., p 99. F C F, p 257.

CONFECTIO SENNÆ. Confection of Senna. In the present preparation oil of coriander is used instead of coriander seed, and the proportion of sugar slightly increased to make up for the coriander seed omitted, metric weight takes the place of parts. Senna, in No. 60 powder, 100 gm. (or 100 grains), cassia fistula, bruised, 160 gm. (or 160 grains), tamarind 100 gm. (or 100 grains) prune, sliced, 70 gm. (or 70 grains), fig, bruised, 120 gm. (or 120 grains, sugar in fine powder 555 gm. (or 555 grains), oil of coriander 5 gm. (or 5 minims), water a sufficient quantity to make 1000 gm. (or 1000 grains=2 ounces av.+125 grains). For manner of making see U. S., p 99. F C F, p 258.

CREOSOTUM. Creosote. "A mixture of phenols, chiefly guaiacol and cresol, obtained during the distillation of wood-tar, preferably of that derived from the beech, *fagus sylvatica*. <U. S., p 101. F C F, 263, 694.

Note the change of spelling, which was, in the 1880 Pharm. creasote. Sp. gr. not below 1.070 at N T. Soluble in 150 parts of water at N T. and in all proportions in absolute alcohol, ether, chloroform, benzin, acetic acid and oils. Boils at 205°C. (402.8°F.) and when cooled to —20°C. (—4°F.) it becomes gelatinous but does not solidify. This is a good test to distniguish it from carbolic acid, which is frequently sold for creosote.

CRETA PRÆPARATA. Prepared Chalk. $CaCO_3$.

Nearly insoluble in water, and entirely insoluble in alcohol. In dilute acetic, hydrochloric or nitric acid it dissolves with evolution of CO_2. U. S., p 101. F C F, p 206.

CUPRI SULPHAS. Copper Sulphate. CUPRIC SULPHATE. $CuSO_4+5H_2O$.

This still remains the only official salt of copper; the supplementary title cupric sulphate is added in the present revision, but it is more commonly known by its commercial name *Blue Vitriol*. It is soluble at N T. in about 2 6 parts of water and in 0.5 part of boiling water, nearly insoluble in alcohol. <U. S., p 103. F C F, p 265.

Cusso. Kousso. BRAYERA, PHARM. 1880. Note the the change of title in the present Pharm. <U. S., p 103.

DECOCTA. Decoctions. An important change is made in the general formula for decoctions in the new Pharm. by reducing their strength one-half; they are, however, so little used in this country that no confusion need result. The present formula is to take of the substance, coarsely comminuted, 50 gm. (or 365 grains), water a sufficient quantity to make 1000 Cc. (or 16 fl.ounces). The substance is to be put in a covered vessel, 1000 Cc. (or 1 pint) of water poured upon it and, keeping well covered, boiled for fifteen minutes. It is then cooled to about 40° C. (140° F.), expressed and strained and enough cold water passed through the strainer to make up the measure to the required quantity. <U. S., p 104. F C F, p 268.

DECOCTUM CETRARIÆ. Decoction of Cetraria. This preparation remains unchanged except by the substitution of metric weight and measure for parts. Cetraria 50 gm. (or 364 grains), water enough to make 1000 Cc. (or 16 fl.ounces). Cover the cetraria with water, express after half an hour and throw the liquid away, then make a decoction by boiling with fresh water for half an hour as directed in the previous formula. <U. S., p 104. F C F, p 268.

DECOCTUM SARSAPARILLÆ COMPOSITUM. Compound Decoction of Sarsaparilla. The formula for this is the same as in the 6th revision except that metric weight is substituted for parts. Sarsaparilla, cut and bruised 100 gm. (or 2 ounces), sarsafras, in No. 20 powder 20 gm. (or 175 grains), guaiacum wood, rasped, 20 gm. (or 175 grains), glycyrrhiza, bruised, 20 gm. (or 175 grains), mezereum, cut and bruised, 10 gm. (or 87 grains), water a sufficient quantity to make 1000 Cc. (or 20 ounces). The sarsaparilla and guaiacum are to be boiled for half an hour in 1000 Cc. (or 20 ounces) of water, the sassafras, glycyrrhiza and mezereum are then to be added, the vessel covered and the contents macerated for two hours: it is then strained and enough water added through the strainer to make the product measure 1000 Cc. (or 20 ounces).

ELASTICA. India Rubber. Caoutchouc. "The prepared milk-juice of various species of *Hevea* known in commerce as Para rubber." <U. S., p 106. F C F, 725.

This is now made official because of its use in making *charta sinapis* in place of gutta-percha, which was directed in the former revision. It is insoluble in water, alcohol, dilute acids or dilute solutions of alkalies. Soluble in chloroform, carbon disulphide, oil of turpentine, benzin and benzol. It melts at about 125° C. (257° F.), remaining soft and adhesive after cooling. When heated together with 12 to 15 per cent. of sulphur it becomes more or less hard or "vulcanized."

ELATERINUM. Elaterin. $C_{20}H_{28}O_5$. "A neutral principle obtained from elaterium, a substance deposited by the juice of the fruit of *ecballium elaterium*." <U. S., p 106. F C F, p 274.

It is very nearly insoluble in water, 4250 parts being required for one part of the drug. In alcohol 337 parts are required, and in ether 543 parts, but in chloroform it dissolves in 2.4 parts. The dose of elaterin is $\frac{1}{16}$ grain.

ELIXIRA. Elixirs. The present Pharm., like its predecessors, decline to furnish formulas for even a limited line of elixirs, ignoring the fact that as a class they are much more used than tinctures, syrup or many other classes of official preparations. For reliable formulas for elixirs and elegant preparations <F C F, p 274 to 382.

ELIXIR AROMATICUM. Aromatic Elixir. This formula is intended to take the place of the *elixir aurantii* of the sixth revision. Its ingredients are entirely changed but the resultant preparation is quite similar. This is designed as a base or vehicle to which additions may be made as desired by the prescribing physician, or by druggists who wish to prepare them. Compound spirit of orange 12 Cc. (or 1 fl.ounce), syrup 375 Cc. (or 31¼ fl.ounces), precipitated calcium phosphate 15 gm. (or 1¼ ounces av.), deodorized alcohol, distilled water each a sufficient quantity

to make 1000 Cc. (or 83⅓ fl.ounces=5 pints, 3⅓ fl.ounces). "To the compound spirit of orange add enough deodorized alcohol to make 250 Cc. (or about 21 fl.ounces), to this solution add the syrup in several portions, agitating after each addition, and afterwards add, in the same manner, 375 Cc. (or 31¼ fl.ounces) of distilled water. Mix the precipitated calcium phosphate intimately with the liquid, and then filter through a wetted filter, returning the first portions of the filtrate until a transparent liquid is obtained. Lastly, wash the filter with a mixture of 1 volume of deodorized alcohol, and 3 volumes of distilled water until the product measures 1000 Cc. (or 83⅓ fl.ounces." <U. S., p 107.

It is doubtful if those who have FENNER'S COMPLETE FORMULARY, will make their aromatic elixir from the forgoing formula As it has no medicinal qualities it need not necessarily, be used, because it is official, if any other, harmless, flavored vehicle is preferable. This must, of course, be left to the judgment of druggists and physicians who prepare and use the elixirs.

ELIXIR PHOSPHORI. Elixir of Phosphorus. *new.* Spirit of phosphorus 210 Cc. (or 3⅜ fl.ounces), oil of anise 2 Cc. (or 16 minims), glycerin 550 Cc. (or 8⅞ fl.ounces), aromatic elixir a sufficient quantity to make 1000 Cc. (or 16 fl.ounces). "To the spirit of phosphorus contained in a graduated bottle, add the oil of anise and glycerin and mix them by repeatedly inverting the bottle until they form a clear liquid. Then add aromatic elixir in several portions, gently agitating after each addition, until a transparent liquid is obtained and the product measures 1000 Cc. (or 16 fl.ounces). Keep the product in dark amber-colored, well-stoppered bottles, in a cool place." <U. S., p 107.

Each Cc. represents about ¼ milligramme (0.00025 gm. or 0.00385 grain) of phosphorus.

EMPLASTRA. Plasters. In this class emplastrum ammoniaci, emplastrum asafœtidæ, emplastrum galbani, and emplastrum picis Canadensis which were official in the 1880 Pharm., are dismissed; otherwise they are but little changed. In fact the Pharmacopœial plasters are scarcely used at all, their place being supplied by the proprietary plasters of manufacturers.

EMPLASTRUM AMMONIACI CUM HYDRARGYRO. Ammoniac Plaster with Mercury. The present formula is the same as the former except that metric weight and measure are directed instead of parts by weight. It is therefore unnecessary to repeat the formula here. <U. S., p 108. F C F, p 383.

EMPLASTRUM ARNICÆ. Arnica Plaster. The present formula is extract of arnica root 330 gm. (or 330 grains), resin plaster 670 gm. (or 670 grains), to make 1000 gm. (or 1000 grains

=2 ounces av. + 125 grains). The plaster is first melted by water-bath and the extract added, they are then thoroughly mixed. This is practically the same as before. <U. S., p 108. F C F, p 383.

EMPLASTRUM BELLADONNÆ. Belladonna Plaster. The present formula is changed entirely as follows: Alcoholic extract of belladonna leaves 200 gm. (or 2 ounces), resin plaster 400 gm. (or 4 ounces), soap plaster 400 gm. (or 4 ounces). The plasters are to be melted together on a water-bath and the extract of belladonna leaves added, continuing the heat and incorporating them well together by constant stirring. <U. S., p 108. F C F, p 384.

The 1880 formula directed an alcoholic extract of Belladonna root to be prepared and incorporated with resin plaster. The present formula s identical with the Br P., except that the ext. belladona was made from the root instead of the leaves.

EMPLASTRUM CAPSICI. Capsicum Plaster. There is no change in this. The Pharm. directs resin plaster to be spread on muslin and a thin coating of oleoresin of capsicum spread over it by means of a brush.

Druggists take the spread adhesive plaster (which is resin plaster) and apply the oleoresin of capsicum with a small brush, leaving a margin along the edges on which it is not brushed. But manufacturer's capsicum plasters already prepared are most generally supplied unless the official plaster is specially ordered. <U. S., p 109. F C F, p 384.

EMPLASTRUM FERRI. Iron Plaster. STRENGTHENING PLASTER. The present Pharm. formula is somewhat changed. Olive oil taking the place of Canada turpentine, and the proportion of the remaining ingredients all altered. Ferric hydrate, dried at a temperature not exceeding 80° C. (176° F.), 90 gm. (or 90 grains), olive oil 50 gm. (or 50 grains), Burgundy pitch 140 gm. (or 140 grains), lead plaster 720 gm. (or 720 grains), to make 1000 gm. (or 1000 grains = 2 ounces av. + 125 grains). The lead plaster and pitch are to be melted together by water-bath, the olive oil added, then the ferric hydrate incorporated, and stirred while cooling. <U. S., p 109. F C F, p 385.

EMPLASTRUM HYDRARGYRI. Mercurial Plaster. The present formula is entirely changed from the former. Mercury 300 gm. (or 300 grains), oleate of mercury 12 gm. (or 12 grains), lead plaster a sufficient quantity to make 1000 gm. (or 1000 grains = 2 ounces av. + 125 grains). The mercury is to be triturated with the oleate of mercury in a tared (weighed) capsule, until globules of metal are no longer visible, the capsule is then to be

placed on a water-bath with enough lead plaster previously melted to make the contents weigh 1000 gm. (or 1000 grains = 2 ounces av. + 125 grains. <U. S., p 109. F C F, p 386.

EMPLASTRUM ICHTHYOCOLLÆ. Isinglass Plaster. COURT PLASTER. The formula remains the same as before, metric weight being directed instead of parts. As this is seldom made except by manufacturers it is unnecessary to repeat the formula. <U. S., p 110. F C F, p 387.

EMPLASTRUM OPII. Opium Plaster. The present formula is the same as the former except that metric weight and measure are directed instead of parts. Extract of opium 60 gm. (or 60 grains), Burgundy pitch 180 gm. (or 180 grains), lead plaster 760 gm. (or 760 grains), water 80 Cc. (or 80 minims). The extract of opium is to be rubbed with the water until uniformily soft and added to the Burgundy pitch and lead plaster previously melted together by heat of a water-bath, the heat is then to be continued for a short time with stirring until the water is evaporated. <U. S., p 110. F C F, p 387.

EMPLASTRUM PICIS BURGUNDICÆ. Burgundy Pitch Plaster. In the present formula olive oil is added. Burgundy pitch 800 gm. (or 8 ounces), olive oil 50 gm. (or ½ ounce), yellow wax 150 gm. (or 1½ ounces). The Burgundy pitch and wax are to be melted together and the oil added, stirring constantly until cool. <U. S., p 111. F C F, p 388.

EMPLASTRUM PICIS CANTHARIDATUM. Cantharidal Pitch Plaster. WARMING PLASTER. This takes the place of the Emplastrum *Picis cum Cantharide*, of the former revision, the ingredients and proportions being the same. Cerate of Cantharides 80 gm. (or 1 ounce), Burgundy pitch sufficient to make 1000 gm. (or 12½ ounces). The cerate of cantharides is to be melted on a water-bath containing boiling water and the heat continued for 15 minutes; the melted cerate is then to be strained through muslin of close texture so that the cantharides will be retained on the muslin and then sufficient Burgundy pitch added to the strained liquid to make the whole weigh 1000 gm. (or 12½ ounces), and then melted together and stirred while cooling. <U. S., p 111. F C F, p 389.

EMPLASTRUM PLUMBI. Lead Plaster. DIACHY ON PLASTER. The ingredients and proportions of the formula of the new Pharm. are the same as before, but the quantities directed are

such that the product would be about 20 pounds av. Lead oxide 3200 gm. (or 7 pounds av. + 384 grains), olive oil 6000 gm. (or 13 pounds 3 ounces av. + 282 grains), water a sufficient quantity. "Mix the lead oxide, previously passed through a No. 80 sieve, intimately with about one-half of the olive oil by trituration, and add the mixture to the remainder of the oil contained in a bright copper boiler with a capacity equal to at least four times the bulk of the ingredients. Then add 1000 Cc. (or 33 fl.ounces + 390 minims) of boiling water and boil the whole together over a fire, constantly stirring with a wooden spatula until a small portion when dropped into cold water is found to be pliable and tenecious. From time to time add a little water to replace that lost by evaporation. When the contents of the boiler have acquired a whitish color and are perfectly homogeneous, transfer them to a vessel containing warm water, and as soon as the mass has sufficiently cooled, knead it well with the water so as to remove the glycerin, renewing the water from time to time as long as it may be necessary; finally divide the mass into rolls of suitable size." <U. S., p 111. F C F, p 389.

The explicit directions for manipulation in this formula, as above quoted, have long been needed. The quantity directed was probably chosen by the Committee of Revision because of the better and more uniform result obtained in making a large quantity.

EMPLASTRUM RESINÆ. Resin Plaster. ADHESIVE PLASTER. There is no change in this ezcept the substitution of metric weight for parts. Resin in fine powder 140 gm. (or ⅞ ounce), lead plaster 800 gm. (or 5 ounces), yellow wax 60 gm. (or ⅜ ounce). The plaster and wax are to be melted together by gentle heat and the resin added and throughly incorporated. <U. S., p 112. F C F, p 390.

EMPLASTRUM SAPONIS. Soap Plaster. This preparation is the same except that metric weight is directed instead of parts. Soap (Castile) dried and in coarse powder 100 gm. (or 1 ounce), lead plaster 900 gm. (or 9 ounces), water a sufficient quantity; enough water is to be rubbed with the soap to reduce it to a semi-liquid state and it is then added to the lead plaster previously melted and the heat continued to evaporate the water added. <U. S., p 112. F C F, p 391.

EMULSA. Emulsions. A number of preparations which have heretofore been classed in the U. S. Pharm. as mixtures, now appear as emulsions. This will, no doubt, at first lead to some confusion, but as they are indexed under mixtures, as

well as emulsions, they may readily be referred to. Emulsions proper, that is, emulsions of oils, are not represented in the Pharmacopœia.

EMULSUM AMMONIACI. Emulsion of Ammoniac. MISTURA AMMONIACI, PHARM. 1880. Ammoniac 40 gm. (or 200 grains), water a sufficient quantity to make 1000 Cc. (or 11 fl.ounces). The ammoniac is to be placed in a warmed mortar and rubbed with separate small portions of the water until a uniform emulsion results. This is then to be strained and enough water added through the strainer to make the product measure 1000 Cc. (or 11 fl.ounces. <U. S., p 112. F C F, 620.

EMULSUM AMYGDALÆ. Emulsion of Almond. MISTURA AMYGDALÆ, PHARM. 1880. MILK OF ALMOND. The formula is the same as before except that metric weight and measure are directed instead of parts. Sweet almond 60 gm. (or 240 grains), acacia in fine powder 10 gm. (or 40 grains), sugar 30 gm. (or 120 grains), water a sufficient quantity to make 1000 Cc. (or 9 fl.ounces). Blanch the almonds, add the acacia and sugar, and beat them in a mortar until thoroughly mixed, then rub the mass with 600 Cc. (or 8 ounces) of water gradually added; strain and add through the strainer enough water to make 1000 Cc. (or 9 fl.ounces). <U. S., p 113. F C F, p 621.

EMULSUM ASAFŒTIDÆ. Emulsion of Asafetida. MISTURA ASAFŒTIDÆ, PHARM. 1880. MILK OF ASAFETIDA. The present formula directs asafetida in selected tears 40 gm. (or 200 grains), water a sufficient quantity to make 1000 gm. (or 11 fl.ounces). The directions for making are the same as for emulsion of ammoniac, q. v. <U. S., p 113. F C F, p 621.

EMULSUM CHLOROFORMI. Emulsion of Chloroform. MISTURA CHLOROFORMI, PHARM. 1880. The formula for this preparation is entirely changed, the present formula being: Chloroform 40 Cc. (or 160 minims), expressed oil of almond 60 Cc. (or 240 minims), tragacanth in very fine powder 15 gm. (or 60 grains), water a sufficient quantity to make 1000 Cc. (or 11 fl.ounces). "Introduce the tragacanth into a perfectly dry bottle of sufficient capacity, add the chloroform and shake the bottle thoroughly, so that every part of the surface may become wetted. Then add about 250 Cc. (or 2¼ ounces) of water and incorporate it by vigorous shaking. Next add the expressed oil of almond in several portions, shaking after each addition, and when the oil has been thoroughly emulsified, add enough water in divided portions,

shaking after each addition until the product measures 1000 Cc. (or 11 fl.ounces). <U. S., p 113.

It will be noticed that, when the difference in weight and measure of chloroform is considered, the new preparation contains ¼ less chloroform than the former, therefore care must be taken in dispensing, not to mistake the one for the other. The omission of camphor in the new formula must also be taken into account.

EUCALYPTOL. Eucalyptol. $C_{10}H_{18}O$. "A neutral body obtained from the volatile oil of *Eucalyptus globulus* and other species." <U. S., p 115. F C F, p 648.

Eulacyptol is a colorless liquid, with sp. gr. 0.930 at N T. and boiling point 176° to 177°C. and solidifying at some degrees below the freezing point of water, 0°C. (32°F.), by which means it is separated from oil of eucalyptus. It is soluble in alcohol in all proportions, also in carbon disulphide and glacial acetic acid. It is used as a stimulant to the mucous membrane in bronchial affections, catarrh, etc.

EXTRACTA. EXTRACTS. In the so called *solid extracts* of the new Pharm. three new ones have been added, viz.: extract of cimicifuga, extract of jalap, and extract of uva ursi, and one, extract of malt, has been dismissed. The chief changes to be noted in this class is the omission of glycerin, which was directed in many of the formulas of the 1880 Pharm., and the alkaloidal assay of extracts of nux vomica, and extract of opium. Metric weight and measure is also substituted for parts. To save needless repetition we have given a general formula corresponding with the directions of the Pharmacopœia, and in each formula for an extract, have stated the menstruum required and any special manipulation, aside from the general formula, that may be directed.

EXTRACTS. General Formula.

The drug, in No.—— powder, 1000 gm. (or 2 pounds).

The menstruum, a sufficient quantity.

The powdered drug is to be moistened with sufficient menstruum (from 250 to 400 Cc. or from 8 to 12 fl.ounces) and, after standing a few hours, packed firmly in a percolator, (preferably a water-bath percolator) and enough of the menstruum added to cover the powder and leave a stratum above it. When the liquid begins to drop from the percolator the lower orifice is to be closed, the top closely covered, and the contents allowed to macerate for 24 to 48 hours. The percolation is then to begin and be continued, gradually, adding fresh menstruum as required, until the drug is exhausted of its medicinal strength. The first 900 Cc. (or 29 fl.ounces) of the percolate are reserved, and the remainder evaporated (and recovered by distillation if alcoholic) to 100 Cc. (or 3 fl.ounces). This is to be added to the reserved portion and the whole evaporated by the heat of a water-bath to an extract of pilular consistence, when cold. <F C F, p 442.

EXTRACTS FROM FLUID EXTRACTS. Solid or pilular extracts which druggists do not have on hand are often required in small quantities for prescriptions, etc. They can readily be made by evaporating a fluid extract of the required drug to a pilular consistence by the heat of a water bath.

EXTRACTUM ACONITI. Extract of Aconite.

Alcohol, in No. 60 powder, 1000 gm. (or 2 pounds).

Alcohol, a sufficient quantity.

Make an extract according to the general formula, recovering the alcohol by distillation. <U. S., p 117. F C F, p 443.

EXTRACTUM ALOES. Extract of Aloes.

Aloes, 100 gm. (or 3½ ounces).

Boiling distilled water, 1000 Cc. (or 34 fl.ounces).

"Mix the aloes with the water in a suitable vessel, stirring constantly until the particles of aloes are thoroughly disintergrated, and let the mixture stand for 12 hours, then pour off the clear liquor , strain the residue, mix the liquids, and evaporate to dryness by means of a water or steam bath. <U. S., p 117. F C F, p 443.

EXTRACTUM ARNICÆ RADICIS. Extract of Arnica Root.

Arnica root, in No. 60 powder, 1000 gm. (or 2 pounds).

Diluted alcohol, a sufficient quantity.

Prepare according to the general formula. <U. S., p 118. F C F, p 443.

EXTRACTUM BELLADONNÆ FOLIORUM ALCOHOLICUM. Alcoholic Extract of Belladonna Leaves. EXTRACTUM BELLADONNÆ ALCOHOLICUM, PHARM. 1880.

Belladonna leaves, in No. 60 powder, 1000 gm. (or 2 pounds).

Alcohol and water, each, a sufficient quantity.

Mix two measures of alcohol with one measure of water as a menstruum, and prepare according to the general formula.

EXTRACTUM CANNABIS INDICÆ. Extract of Indian Cannabis.

Indian Cannabis, in No. 20 powder, 1000 gm. (or 2 pounds).

Alcohol, a sufficient quantity.

Prepare the extract according to the general directions, recovering the alcohol from the percolate by distillation. <U. S., p 124. F C F, p 444.

EXTRACTUM CIMICIFUGÆ. Extract of Cimicifuga.

Cimicifuga, in No. 60 powder, 1000 gm. (or 2 pounds).

Alcohol, a sufficient quantity.

Prepare the extract according to the general directions, recovering the alcohol from the percolate by distillation. <U. S., p 126. *new.*

EXTRACTUM CINCHONÆ. Extract of Cinchona.

Cinchona, in No. 60 powder, 1000 gm. (or 2 pounds).
Alcohol 3000 gm. (or 6 pints).
Water 1000 gm. (or 2 pints).
Diluted alcohol a sufficient quantity.

The alcohol and water are to be mixed, and the drug percolated with the mixture, following it with diluted alcohol until 4000 Cc. (or 8 pints) of percolate have passed. The alcohol is then to be recovered by distillation, and the remaining liquid evaporated by water-bath to pilular consistence. <U. S., p 127. F C F, p 444.

EXTRACTUM COLCHICI RADICIS. Extract of Colchicum Root.

Colchicum root, in No. 60 powder, 1000 gm. (or 2 pounds av.).
Acetic acid 350 Cc. (or 11¼ fl.ounces).
Water, a sufficient quantity.

The acetic acid is to be mixed with 1500 Cc. (or 3 pints) of water, and the drug percolated with the mixture, following the percolation with water until the drug is exhausted, and evaporating the percolate in a porcelain vessel by means of a water-bath, to pilular consistence. <U. S., p 128. F C F, p 445.

EXTRACTUM COLOCYNTHIDES. Extract of Colocynth.

Colocynth, dried and freed from the seeds, 1000 gm. (or 2 pounds).
Diluted alcohol, a sufficient quantity.

The drug, in coarse powder, is to be percolated until exhausted as detailed in the general formula, the percolate being evaporated, the alcohol recovered by distillation, and the remainder reduced by evaporating to pilular consistence. <U. S., p 130. F C F, p 445.

EXTRACTUM COLOCYNTHIDIS COMPOSITUM. Compound Extract of Colocynth.

Extract of colocynth, 160 gm. (or 160 grains).
Purified aloes, 500 gm. (or 500 grains).
Cardamom, in No. 60 powder, 60 gm. (or 60 grains).
Resin of scammony, in fine powder, 140 gm. (or 140 grains).
Soap, dried and in coarse powder, 140 gm. (or 140 grains).
Alcohol, 100 Cc. (or 100 minims).

The aloes is melted in a suitable vessel on a water-bath, the

alcohol, soap, extract of colocynth and resin of scammony are added and the mixture heated, not exceeding 120° C. (248° F.), until it is perfectly homogeneous, and a thread taken from the mass becomes brittle when cool. The cardamom is then incorporated and the vessel covered until cold, when the mass is reduced to a fine powder. <U, S., p 131. F C F, p 445.

EXTRACTUM CONII. Extract of Conium.

Conium, in No. 40 powder, 1000 gm. (or 2 pounds, av.).

Acetic acid, 20 Cc. (or 5 fl.drachms).

Diluted alcohol, a sufficient quantity.

The acetic acid is to be mixed with 980 Cc. (or 2 pints) of diluted alcohol and the drug percolated as directed in the general formula, following the menstruum first used with diluted alcohol until the drug is exhausted and the percolate is then evaporated to an extract of pilular consistence. <U. S., p 131. F C F, p 445.

This was called extractum conii alcoholicum in the former revision.

EXTRACTUM DIGITALIS. Extract of Digitalis.

Digitalis, in No. 60 powder, 1000 gm. (or 2 pounds).

Alcohol and water, each, a sufficient quantity.

Alcohol 2 measures with water 1 measure are mixed and an extract made according to the general formula, recovering the alcohol from the percolate by distillation and evaporating the remainder to pilular consistence. <U. S., p 134. F C F, p 446.

EXTRACTUM ERGOTÆ. Extract of Ergot.

Fluid extract of ergot 150 Cc. (or 5 ounces).

Is directed to be evaporated by means of a water-bath at a temperature not exceeding 50° C. (122° F.), stirring constantly until it is reduced to pilular consistence. <U. S., p 135. F C F, p 446.

In a similar manner other extracts may be made, in small quantities, from fluid extracts and thus save the necessity of carrying a complete line of solid extracts, for which there is now but little demand.

EXTRACTUM EUONYMI. Extract of Euonymus.

Euonymus, in No. 30 powder, 1000 gm. (or 2 pounds).

Alcohol and water, each a sufficient quantity.

Alcohol 2 measures with water 1 measure are to be mixed and the drug percolated with the mixture according to the general formula, the alcohol being recovered by distillation and the remainder of the percolate evaporated to pilular consistence. <U. S., p 137. F C F, p 446.

EXTRACTUM GENTIANÆ. Extract of Gentian.

Gentian, in No. 20 powder, 1000 gm. (or 2 pounds).

Water, a sufficient quantity.

The gentian is moistened with 400 Cc. (or 13 fl.ounces) of water and macerated for 24 hours, then packed in a conical percolator and exhausted with water as directed in the general formula, the liquid is then reduced to ¾ of its bulk by boiling, strained and evaporated by water-bath to pilular consistence. <U. S., p 139. F C F, p 446.

EXTRACTUM GLYCYRRHIZÆ. Extract of Glycyrrhiza. Extract of Liquorice. "The commercial extract of the root of *Glycyrrhiza glabra*." <U. S., p 140.

Not less than 60 per cent. of it should be soluble in cold water.

EXTRACTUM GLYCYRRHIZÆ PURUM. Pure Extract of Glycyrrhiza.

Glycyrrhiza, in No. 20 powder, 1000 gm. (or 2 pounds, av.).

Ammonia water, 150 Cc. (or 5 fl.ounces).

Distilled water, a sufficient quantity.

The ammonia water is to be mixed with 3000 Cc. (or 6 pints) of distilled water and the drug percolated with the mixture as directed in the general formula, following the menstruum with distilled water until the drug is exhausted. The percolate is then to be evaporated by means of a water-bath to a pilular consistence <U. S., p 141. F C F, p 446.

EXTRACTUM HÆMATOXYLI. Extract of Hæmatoxylon.

Hæmatoxylon rasped, 1000 gm. (or 2 pounds).

Water, 10,000 Cc. (or 20 pints).

"Macerate the hæmatoyxlon with the water for 48 hours, then boil (avoiding the use of metallic vessels) until one-half of the water has evaporated; strain the decoction, while hot, and evaporate to dryness." <U. S., p 143. F C F, p 447.

It is not to be supposed that many druggists will prepare this extract, the commercial extract being sufficiently pure for the purposes for which it is used in Pharmacy.

EXTRACTUM HYOSCYAMI. Extract of Hyoscyamus.

Hyoscyamus, in No. 60 powder, 1000 gm. (or 2 pounds).

Alcohol, 2000 Cc. (or 2 pints).

Water, 1000 Cc. (or 1 pint).

Diluted alcohol, a sufficient quantity.

The alcohol and water are to be mixed and the drug percolated with the mixture, following with diluted alcohol until exhausted,

as directed in the general formula. The alcohol is to be recovered from the percolate by distillation, and the remaining liquid evaporated by a water-bath to pilular consistence. <U. S., p 144. F C F, p 447.

EXTRACTUM IRIDIS. Extract of Iris.

Iris, in No. 60 powder, 1000 gm. (or 2 pounds).

Alcohol, a sufficient quantity.

Prepare an extract as directed in the general formula, recovering the alcohol by distillation. <U. S., p 146. F C F, p 447.

EXTRACTUM JALAPÆ. Extract of Jalap. *new.*

Jalap, in No. 60 powder, 1000 gm. (or 2 pounds).

Alcohol, a sufficient quantity.

Prepare an extract as directed in the general formula, recovering the alcohol by distillation. <U. S., p 147. F C F, 447.

EXTRACTUM JUGLANDIS. Extract of Juglans.

Juglans, in No. 30 powder, 1000 gm. (or 2 pounds).

Diluted alcohol, a sufficient quantity.

Prepare an extract as directed in the general formula, recovering the alcohol by distillation, and evaporating the remainder by water-bath to pilular consistence. <U. S., p 147. F C F, p 447.

EXTRACTUM KRAMERIÆ. Extract of Krameria.

Krameria, in No. 40 powder, 1000 gm. (or 2 pounds).

Water, a sufficient quantity.

Percolate in a conical glass percolator with water until the drug is exhausted, then heat the percolate to boiling, strain and evaporate the strained liquid by water-bath at a temperature not exceeding 70° C. (158° F.), to dryness. <U. S., p 148. F C F, p 448.

EXTRACTUM LEPTANDRÆ. Extract of Leptandra.

Leptandra, in No. 40 powder, 1000 gm. (or 2 pounds).

Alcohol and water, each a sufficient quantity.

Mix 3 measures of alcohol with 1 measure of water, and percolate the drug as directed in the general formula, until it is exhausted. Recover the alcohol by distillation and evaporate the residue by water-bath to pilular consistence. <U. S., p 149. F C F, 448.

EXTRACTUM MALTI. Extract of Malt. This was official in the 1880 Pharm. but is dismissed in the present revision. As this is much used, and not more difficult to make than many other extracts we do not understand why it was dismissed. <F C F, p 448.

EXTRACTUM MEZEREI. Extract of Mezereum. This extract which was official in the 1880 Pharm has been dismissed in the present revision.

EXTRACTUM NUCIS VOMICÆ. Extract of Nux Vomica.

Nux vomica, in No. 60 powder, 1000 gm. (or 2 pounds).

Acetic acid, 50 Cc. (or 1½ fl.ounces).

Alcohol, water, ether, and sugar of milk, each a sufficient quantity.

The acetic acid is to be mixed with the powdered nux vomica and it is then to be exhausted by percolating as directed in the general formula,with alcohol 3 measure mixed with water 1 measure. The alcohol is then to be distilled off and the remainder introduced into a tared (weighed) capsule and evaporated until it weighs about 150 gm. (or 5 ounces av.). This is to be transferred to a bottle holding 500 Cc. (or 1 pint), the capsule rinsed with about 50 Cc. (or 1½ ounce) of warm water and added to the contents of the bottle, and when cold one-fourth of its volume of ether added and thoroughly agitated, but without violent shaking. The etherial layer is then to be poured off and another fresh portion added in the same manner several times until all oily or greasy substances are removed. Then the contents of the bottle are removed to the tared capsule, rinsing the bottle with water and adding to the liquid in the capsule. The ether is to be recovered from the etherial washings by distillation and to the oily residue 15 Cc. (or ½ ounce) of boiling water is added and then acetic acid drop by drop until the mixture has a permanent acid reaction. Then it is to be filtered through a moistened filter, washing the filter with a little water, and the filtrate added to the extract in the capsule, and evaporated until the residue weighs about 200 gm. (or 6⅔ ounces). When cool its exact weight is determined and a portion of 4 grammes (or 60 grains) of extract taken and assayed by the process directed in the Pharm. Another portion of 5 gm. (or 75 grains) is then taken and evaporated to a dry extract, the loss showing the amount of water contained. From the results of the assay, showing the total amount of alkaloids, and having ascertained the amount of water contained, is then determined the amount of sugar of milk to be added to bring the quantity of alkaloids in the final dry extract to 15 per cent. After the addition of the sugar of milk the mass is evaporated to complete dryness and reduced to a powder. For process of assay see the U. S. Pharmacopœia. <U. S., p 152, F C F, p 448.

The formula for this extract is entirely different from the 1880 Pharm., and much better, because it furnishes an extract of definite alkaloidal strength in the form of a powder, which admits of its being mixed more intimately in a pill mass than a pilular extract. It is not likely that many retail druggists will prepare this, but will rather use the preparation of some reliable manufacturing house.

EXTRACTUM OPII. Extract of Opium.

Powdered opium, 100 gm. (or 4 ounces).
Sugar of milk, recently dried and in fine powder,
Water, each, a sufficient quantity.

The powdered opium is to be triturated thoroughly with 1000 Cc. (or 40 ounces) of water and triturated occasionally during 12 hours, then filtered through a double filter and water added through the filter to wash it thoroughly. The filtrate is then to be concentrated by evaporation on a water-bath, until the residue weighs about 200 gm. (or 8 ounces), and allowed to cool. The weight is then to be acurately determined, and 12 gm. (or 110 grains) of the liquid to be transferred to an Erlenmeyer flask, having a capacity of about 100 Cc. (or 4 ounces), and the amount of morphine which it contains, determined by the process of assay directed in the U. S. Pharmacopœia. In another portion of 5 gm. (or 45 grains) the amount of water is to be determined by evaporating to dryness. From these results the percentage of morphine and water are obtained, and enough sugar of milk is added to the remainder of the extract to bring the quantity of morphine in the final dry extract to 18 per cent. This is then to be evaporated to dryness and reduced to a powder. See process of assay in the U. S. Pharmacopœia, p 156. <U. S., p 155. F C F, p 449.

This preparation takes the place of the indefinite extract of opium that has heretofore been furnished, and must be of great advantage to pharmacists and physicians; as it is in powdered form it will also be much more convenient than the soft extract that has usually been furnished as extract of opium. It is not likely that many retail pharmacists will prepare this extract, rather depending on the preparation of reliable manufacturing pharmacists.

EXTRACTUM PHYSOSTIGMATIS. Extract of Physostigma.

Physostigma, in No. 80 powder, 1000 Cc. (or 2 pounds).
Alcohol, a sufficient quantity.

Prepare an extract as directed in the general formula, recovering the alcohol by distillation. <U. S., p 157. F C F, p 449.

EXTRACTUM PODOPHYLLI. Extract of Podophyllum.

Podophyllum, in No. 60 powder, 1000 gm. (or 2 pounds).
Alcohol and water, each, a sufficient quantity.

Mix 4 measures of alcohol with 1 measure of water and proceed

as directed in the general formula, recovering the alcohol by distillation, and evaporating the remainder by water-bath to pilular consistence. <U. S., p 158. F C F, p 449.

EXTRACTUM QUASSIÆ. Extract of Quassia.

Quassia, in No. 20 powder, 1000 gm. (or 2 pounds).

Water, a sufficient quantity.

Exhaust the quassia, packed in a conical percolator, with water; reduce the percolate to ¾ of its bulk by boiling, then strain and evaporate by water-bath to pilular consistence. <U. S., p 160. F C F, p 449.

EXTRACTUM RHEI. Extract of Rhubarb.

Rhubarb, in No. 30 powder, 1000 gm. (or 2 pounds).

Alcohol and water, each a sufficient quantity.

Mix 4 measures of alcohol with 1 measure of water, and percolate as directed in the general formula. Reserve the first portion of 1000 Cc. (or 2 pints) and allow it to evaporate spontaneously in a warm place. Evaporate the remainder of the percolate by water-bath at a temperature not exceeding 79° C. (158° F.), to the consistence of syrup, which mix with the reserved portion and evaporate the whole, at a heat not exceeding the degree mentioned, to pilular extract. <U. S., p 162. F C F, p 450.

EXTRACTUM STRAMONII SEMINIS. Extract of Stramonium Seed. Extract of Stramonii, Pharm. 1880.

Stramonium seed, in No. 60 powder, 1000 gm. (or 2 pounds).

Diluted alcohol, a sufficient quantity.

Prepare an extract as directed in the general formula, recovering the alcohol by distillation and evaporating the remainder by water-bath to pilular consistence. <U. S., p 171. F C F, 450.

EXTRACTUM TARAXACI. Extract of Taraxacum.

Taraxacum, freshly gathered in autumn, a convenient quantity.

Water, a sufficient quantity.

Taraxacum is to be sliced and bruised in a stone mortar, sprinkling water upon it from time to time until it is reduced to a pulp; the juice is then expressed and strained, and evaporated in a vacuum apparatus or in a shallow porcelain dish, by water-bath, to a pilular consistence. This should be kept in a close vessel and its surface covered with a cloth which should be moistened from time to time with ether or chloroform, this is to prevent molding. <U. S., p 172. F C F, p 450.

EXTRACTUM UVA URSI. Extract of Uva Ursi. *new.*

Uva ursi, in No. 30 power, 1000 gm. (or 2 pounds).

Alcohol and water, each, a sufficient quantity.

Mix 2 measures of alcohol with 3 measures of water and proceed as directed in the general formula. <U. S., p 173.

EXTRACTA FLUIDA. Fluid Extracts. The Fluid Extracts of the present Pharm. are uniformly made to represent 1000 gm. of the drug in 1000 Cc. of the finished preparation. Eleven new ones have been added and two, (fluid extract of cornus and fluid extract of lactucarium), have been dismissed. There are now, in all, 88 official fluid extracts, of which 17 are made with alcohol as a menstruum; 4, with four measures of alcohol to one of water; 12, with three measures of alcohol to one of water; 9, with two measures of alcohol to one of water; 19, with diluted alcohol; 16, with alcohol, water and glycerin, in varying proportions; 4, with alcohol, water and acetic acid, in varying proportions; 2, with alcohol, water and ammonia water, in varying proportions; 5, with water mainly, and sufficient alcohol to preserve them. There are important changes in many of the formulas, and all in which diluted alcohol is directed are necessarly of less alcoholic percentage than in the former revision. To avoid needless repetition, we give a general formula corresponding in general and in all essential particulars with the new Pharm. and state in each formula the menstruum required, it being only necessary to put the name of the drug and the menstruum in the general formula and proceed as directed. Any special manipulations or directions are also given in the formulas.

EXTRACTS FLUID. General Formula.

The drug in No. —— powder, 1000 gm. (or 48 ounces av.)

The menstruum, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces.

The powdered drug is first to be moistened with sufficient menstruum to make it, when well mixed, uniformly damp throughout, This requires from 250 to 400 gm. (or from 12 to 20 fl.ounces). After standing a few hours in a covered vessel it is then to be packed, more ar less firmly, according to the nature of the drug, in a percolator (preferably a water-bath percolator), and menstruum poured upon it sufficient to saturate the drug and leave a stratum above it. When the liquid begins to drop from the lower orifice of the percolator, this outlet is to be closed, the percolator closely covered, and the contents allowed to macerate from 24 to 48 hours. The percolation is then to begin and be continued gradually, adding more menstruum as required to maintain a stratum of liquid above the powder, until the drug is exhausted of its medicinal strength. The first 750 to 900 Cc.(or 35 to 42 fl.ounces) of the percolate is to be reserved and the remainder of the percolate concentrated by distillation (if alcoholic) and evaporation by means of a water-bath, to 100 to 250 Cc. (or 4 to 10 fl.ounces) which

is to be added to the reserved portion, and after standing for some days, is to be decanted or filtered from any sediment which it may contain, adding through the filter enough of the same kind of menstruum that was used, to make the measure 1000 Cc. (or 46 fl.ounces. <U. S., and F C F.

EXTRACTUM ACONITI FLUIDUM. Fluid Extract of Aconite.

Aconite, in No. 60 powder, 1000 gm. (or 3 pounds av.).

Alcohol and water, of each, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

Alcohol 3 measures and water 1 measure are mixed and the fluid extract made as directed in the general formula. <U. S., p 116. F C F, p 459.

In the former revision, alcohol alone was used as a menstruum and 1 per cent. of tartaric acid was directed.

The temperature at which the percolate is evaporated should not exceed 50°C. (122°F.).

EXTRACTUM APOCYNI FLUIDUM. Fluid Extract of Apocynum. *new.*

Apocynum, in No. 60 powder, 1000 gm. (or 3 pounds av).

Glycerin, 100 Cc. (or 4.6 fl.ounces).

Alcohol and water, each a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

The alcohol is to be mixed with 650 Cc. (or 30 fl.ounces) of alcohol, and 250 Cc. (or 11½ fl.ounces) of water, and the drug is first to be percolated with this mixture, and then with a menstruum mixed in the proportion of 6½ measures of alcohol with 3½ measures of water until it is exhausted; and a fluid extract made as directed in the general formula. <U. S., p 117. F C F, p 468

The temperature at which the percolate is evaporated should not exceed 50°C. (122°F.).

EXTRACTUM ARNICÆ RADICIS FLUIDUM. Fluid Extract of Arnica Root.

Arnica root, in No. 60 powder, 1000 gm. (or 3 pounds av).

Alcohol and water, each, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

Alcohol 3 measures is mixed with water 1 measure, and a fluid extract prepared as directed in the general formula. <U. S., p 118. F C F, p 471.

In the former revision diluted alcohol, (by weight) was used as the menstruum.

The temperature at which the percolate is evaporated should not exceed 50°C. (122°F.).

EXTRACTUM AROMATICUM FLUIDUM. Aromatic Fluid Extract.

Aromatic powder 1000 gm. (or 3 pounds av).

Alcohol, a sufficient quantity to make 1000 Cc.(or 46 fl.ounces).

Make a fluid extract as directed in the general formula. <U. S., p 119. F C F, p 459.

EXTRACTUM ASCLEPIADIS FLUIDUM. Fluid Extract of Asclepias. *new.*

Asclepias, in No. 60 powder, 1000 gm. (or 3 pounds av).

Diluted alcohol, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

make a fluid extract as directed in the general formula. <U. S., p 119. F C F, p 461, 487

EXTRACTUM ASPIDOSPERMATIS FLUIDUM. Fluid Extract of Aspidosperma. *new.*

Aspidosperma, in No. 60 powder, 1000 gm. (or 3 pounds av).

Glycerin, 100 Cc. (or 4.6 fl.ounces).

Alcohol and water, of each, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

The glycerin is to be mixed with 600 Cc. (or 28 fl.ounces) of alcohol, and 300 Cc. (or 14 fl.ounces) of water, and the drug is first to be percolated with this mixture, and then with a menstruum mixed in the proportion of 2 measures of alcohol with 1 measure of water until it is exhausted, and a fluid extract made as directed in the general formula. <U. S., p 120. F C F, p 465.

The temperature at which the percolate is evaporated should not exceed 50°C. (122°F.).

EXTRACTUM AURANTII AMARI FLUIDUM. Fluid Extract of Bitter Orange Peel.

Bitter orange peel, in No.40 powder, 1000 gm.(or 3 pounds av)

Alcohol and water, of each, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

Alcohol 2 measures with water 1 measure are mixed as a menstruum and a fluid extract prepared as directed in the general formula. <U. S., p 120. F C F, p 466.

The temperature at which the percolate is evaporated should not exceed 50°C. (122°F.).

EXTRACTUM BELLADONNÆ RADICIS FLUIDUM. Fluid Extract of Belladonna Root. EXTRACTUM BELLADONNÆ FLUIDUM, PHARM. 1880.

Belladonna root, in No. 60 powder, 1000 gm. (or 3 pounds av)
Alcohol and water, of each, a sufficient quantity to make 1000 Cc. (or 40 fl.ounces).

Alcohol 4 measures with water 1 measure, are to be mixed and a fluid extract made as directed in the general formula. <U. S., p 121. F C F, p 459.

This was made with alcohol, without dilution as a menstruum, in the former revision.

The temperature at which the percolate is evaporated should not exceed 50°C. (122°F.).

EXTRACTUM BUCHU FLUIDUM. Fluid Extract of Buchu.

Buchu, in No. 60 powder, 1000 gm. (or 3 pounds av).
Alcohol, a sufficient quantity to make 1000 Cc. (or 40 fl. ounces).

Prepare a fluid extract as directed in the general formula. <U. S., p 122. F C F, p 466.

In the former revision, alcohol, 2 parts with water, 1 part was the menstruum directed.

EXTRACTUM CALAMI FLUIDUM. Fluid Extract of Calamus.

Calamus, in No. 60 powder, 1000 gm. (or 3 pounds av).
Alcohol, a sufficient quantity to make 1000 Cc. (or 46 fl. ounces).

Prepare a fluid extract as directed in the general formula. <U. S., p 122. F C F, p 459.

EXTRACTUM CALUMBÆ FLUIDUM. Fluid Extract of Calumba.

Calumba, in No. 20 powder, 1000 gm. (or 3 pounds av).
Alcohol and water, of each, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

Alcohol 3 measures with water 1 measure are to be mixed as a menstruum, and a fluid extract prepared as directed in the general formula. <U. S., p 123. F C F, p 471.

In the former revision, diluted alcohol, (by weight) was used as the menstruum, the present formula is an improvement.

EXTRACTUM CANNABIS INDICÆ FLUIDUM. Fluid Extract of Indian Cannabis.

Indian cannabis, in No. 20 powder, 1000 gm. (or 3 pounds av)
Alcohol, a sufficient quantity to make 1000 Cc. (or 40 fl. ounces).

Prepare a fluid extract as directed in the general formula. <U. S., p 124. F C F, p 459.

EXTRACTUM CAPSICI FLUIDUM. Fluid Extract of Capsicum.

Capsicum, in No. 60 powder, 1000 gm. (or 3 pounds av).
Alcohol, a sufficient quantity to make 1000 Cc. (or 46 fl. ounces).

Prepare a fluid extract as directed in the general formula. <U. S., p 124. F C F, p 460.

EXTRACTUM CASTANEÆ FLUIDUM. Fluid Extract of Castanea.

Castanea, in No. 30 powder, 1000 gm. (or 3 pounds av.).
Glycerin, 100 Cc. (or 4.6 fl.ounces).
Alcohol and water, each, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

Upon the castanea contained in a suitable vessel, pour 5000 Cc. (or 14½ pints) of boiling water, allow it to macerate 2 hours, then express the liquid, transfer the residue to a percolator and percolate it with water until the medicinal strength is exhausted. Mix the percolate with the expressed liquid and evaporate on a water-bath to 2000 Cc. (or 5¾ pints). When cool add to this 600 Cc. (or 27½ fl.ounces) of alcohol, mix and allow the insoluble matter to subside. Pour off the clear liquid, filter the remainder and evaporate the united liquids to 700 Cc. (or 32 fl.ounces). When cool add to this the glycerin and enough alcohol to make 1000 Cc. (or 46 fl.ounces). <U. S., p 125. F C F, 477.

Glycerin is added in the present revision, but was not directed in the former.

EXTRACTUM CHIMAPHILÆ FLUIDUM. Fluid Extract of Chimaphila.

Chimaphila, in No. 30 powder, 1000 gm. (or 3 pounds av).
Diluted alcohol, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

Prepare a fluid extract as directed in the general formula. <U. S., p 125. F C F, p 471.

EXTRACTUM CHIRATÆ FLUIDUM. Fluid Extract of Chirata.

Chirata, in No. 30 powder, 1000 gm. (or 3 pounds av).
Alcohol and water, each a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

Alcohol 2 measures with water 1 measure are mixed as a menstruum and a fluid extract prepared as directed in the general formula. <U. S., p 126. F C F, p 471.

In the former revision, diluted alcohol, (by weight) was directed as the menstruum.

EXTRACTUM CIMICIFUGÆ FLUIDUM. Fluid Extract of Cimicifuga.

Cimicifuga, in No. 60 powder, 1000 gm. (or 3 pounds av).

Alcohol, a sufficient quantity to make 1000 Cc.(or 46 fl.ounces).

Prepare a fluid extract as directed in the general formula. <U. S., p 126. F C F, p 461, 460.

EXTRACTUM CINCHONÆ FLUIDUM. Fluid Extract of Cinchona.

Cinchona, in No. 60 powder, 1000 gm. (or 3 pounds av).

Glycerin, 200 Cc. (or 9.2 fl.ounces).

Alcohol and water, of each, a sufficient quantity to make 1000 gm. (or 46 fl.ounces).

The glycerin is to be mixed with 800 Cc. (or 37 fl.ounces) of alcohol, and the drug percolated as directed in the general formula, first with this mixture and then with alcohol in the proportion of 4 measures mixed with water 1 measure, until the cinchona is exhausted; 750 Cc. (or 34½ fl.ounces) of the percolate which first passes is reserved and the remainder evaporated to a soft extract which is to be added to the reserved portion and enough alcohol and water mixed in the proportion last directed, added to make 1000 Cc. (or 46 fl.ounces). <U. S., p 127. F C F, p 447.

EXTRACTUM COCÆ FLUIDUM. Fluid Extract of Coca. Fluid Extract of Erythroxylon, Pharm. 1880.

Coca, in No. 40 powder, 1000 gm. (or 3 pounds av).

Diluted alcohol, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

Prepare a fluid extract as directed in the general formula. <U. S., p 128. F C F, p 474.

It will be noted that the official name of this preparation is changed in the present revision, as above.

EXTRACTUM COLCHICI RADICIS FLUIDUM. Fluid Extract of Colchicum Root.

Colchicum root, in No. 60 powder, 1000 gm. (or 3 pounds av).

Alcohol and water, of each, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

Alcohol 2 measures with water 1 measure are to be mixed as a menstruum, and a fluid extract prepared as directed in the general formula. <U. S., p 129. F C F, p 466.

EXTRACTUM COLCHICI SEMINIS FLUIDUM. Fluid Extract of Colchicum Seed.

Colchicum seed, in No. 30 powder, 1000 gm. (or 3 pounds av).
Alcohol and water, of each, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

Alcohol 2 measures is mixed with water 1 measure, and a fluid extract prepared as directed in the general formula. <U. S., p 129. F C F, p 466.

EXTRACTUM CONII FLUIDUM. Fluid Extract of Conium.

Conium, in No. 40 powder, 1000 gm. (or 3 pounds av).
Acetic acid 20 Cc. (or 1 ounce av).
Diluted alcohol, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

Mix the acetic acid with enough diluted alcohol to make 1000 Cc. (or 46 fl.ounces), and use first as a menstruum, percolating the drug with the mixture and then with diluted alcohol until exhausted and make a fluid extract as directed in the general formula. <U. S., p 131. F C F, p 471.

It will be noted that acetic acid is used in the present revision, instead of hydrochloric acid, as was formerly directed.

The temperature at which the percolate is evaporated should not exceed 50° C. (122°F.).

EXTRACTUM CONVALLARIÆ FLUIDUM. Fluid Extract of Convallaria. *new.*

Convallaria, in No. 60 powder, 1000 gm. (or 3 pounds av).
Diluted alcohol, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

Prepare a fluid extract as directed in the general formula. <U. S., p 132. F C F, p 461.

EXTRACTUM CUBEBÆ FLUIDUM. Fluid Extract of Cubeb.

Cubeb, in No. 60 powder, 1000 gm. (or 3 pounds av).
Alcohol, a sufficient quantity to make 1000 Cc. (or 46 fl. ounces).

Prepare a fluid extract as directed in the general formula. <U. S., p 132. F C F, p 460.

EXTRACTUM CUSSO FLUIDUM. Fluid Extract of Kousso. Extractum Brayeræ Fluidum, Pharm. 1880.

Kousso, in No. 40 powder, 1000 gm. (or 3 pounds av).
Alcohol, a sufficient quantity to make 1000 Cc. (or 46 fl. ounces).

Prepare a fluid extract as directed in the general formula. <U. S., p 133. F C F, p 459.

The change in the official Latin name will be noted.

EXTRACTUM CYPRIPEDII FLUIDUM. Fluid Extract of Cypripedium.

Cypripedium, in No. 60 powder, 1000 gm. (or 3 pounds av.).

Diluted alcohol, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

Prepare a fluid extract as directed in the general formula. <U. S., p 133. F C F, p 460.

In the former revision alcohol was directed as a menstruum for preparing this fluid extract.

EXTRACTUM DIGITALIS FLUIDUM. Fluid Extract of Digitalis.

Digitalis, in No. 60 powder, 1000 gm. (or 3 pounds av).

Alcohol and water, each a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

Alcohol 2 measures with water 1 measure are mixed and used as a menstruum. In concentrating the fluid extract by evaporation it is directed in the present Pharm. that the percolate should be evaporated at a heat not exceeding 50° C. (122° F.). <U. S., p 134. F C F, p 467.

EXTRACTUM DULCAMARÆ FLUIDUM. Fluid Extract of Dulcamara.

Dulcamara, in No. 60 powder, 1000 gm. (or 3 pounds av).

Diluted alcohol, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

Prepare a fluid extract as directed in the general formula. <U. S., p 135. F C F, p 471.

EXTRACTUM ERGOTÆ FLUIDUM. Fluid Extract of Ergot.

Ergot, recently ground, and in No. 60 powder, 1000 gm. (or 3 pounds av).

Acetic acid, 20 Cc. (or 1 ounce av).

Diluted alcohol, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

Mix the acetic acid with enough diluted alcohol to make 1000 Cc. (or 46 fl.ounces) and percolate the drug first with this menstruum and then with diluted alcohol as directed and make a fluid extract as directed in the general formula. <U. S., p 135. F C F, p 477.

It will be noted that acetic acid is directed in the present Pharmacopœia instead of hydrochloric acid as was directed in the former revision.

The temperature at which the percolate is evaporated should not exceed 50°C. (122°F.).

EXTRACTUM ERIODICTYI FLUIDUM. Fluid Extract of Eriodictyon. *new.*

Eriodictyon, in No. 60 powder, 1000 gm. (or 3 pounds av).

Alcohol and water, each, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

Alcohol 4 measures with water 1 measure are mixed and a fluid extract prepared as directed in the general formula. The temperature at which the percolate is evaporated should not exceed 50°C. (122°F.). <U. S., p 136. F C F, p 461, 487.

EXTRACTUM EUCALYPTI FLUIDUM. Fluid Extract of Eucalyptus.

Eucalyptus, in No. 40 powder, 1000 gm. (or 3 pounds av.).

Alcohol and water, of each, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

Alcohol 3 measures with water 1 measure, are mixed and a fluid extract prepared as directed in the general formula. <U. S., p 136. F C F, p 460.

EXTRACTUM EUPATORII FLUIDUM. Fluid Extract of Eupatorium.

Eupatorium, in No. 40 powder, 1000 gm. (or 3 pounds av.).

Diluted alcohol, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

Prepare a fluid extract as directed in the general formula. <U. S., p 137. F C F, p 471.

EXTRACTUM FRANGULÆ FLUIDUM. Fluid Extract of Frangula.

Frangula, in No. 40 powder, 1000 gm. (or 3 pounds av.).

Alcohol and water, of each, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

Alcohol 5 measures, with water 8 measures, are mixed as a menstruum, and a fluid extract prepared as directed in the general formula. <U. S., p 138. F C F, p 477.

EXTRACTUM GELSEMII FLUIDUM. Fluid Extract of Gelsemium.

Gelsemium, in No. 60 powder, 1000 gm. (or 3 pounds av).

Alcohol, a sufficient quantity to make 1000 Cc. (or 46 fl. ounces).

Prepare a fluid extract as directed in the general formula. U. S., p 138. F C F, p 460.

EXTRACTUM GENTIANÆ FLUIDUM. Fluid Extract of Gentian.

Gentain, in No. 30 powder, 1000 gm. (or 3 pounds av).
Diluted alcohol, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

Prepare a fluid extract as directed in the general formula. <U. S., p 139. F C F, p 471.

EXTRACTUM GERANII FLUIDUM. Fluid Extract of Geranium.

Geranium, in No. 30 powder, 1000 gm. (or 3 pounds av.).
Glycerin, 100 Cc. (or 4.6 fl.ounces).
Diluted alcohol, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

The glycerin is to be mixed with 900 Cc. (or 42 fl.ounces) of diluted alcohol and used first as the menstruum, the percolation is then to be continued with diluted alcohol until the drug is exhausted, and a fluid extract made as directed in the general formula. <U. S., p 140. F C F, p 471.

EXTRACTUM GLYCYRRHIZÆ FLUIDUM. Fluid Extract of Glycyrrhiza.

Glycyrrhiza, in No. 40 powder, 1000 gm. (or 3 pounds av).
Ammonia water, 50 Cc. (or 2.3 fl.ounces).
Alcohol and water, of each, a sufficient quantity to make 1000 gm. (or 46 fl.ounces).

The ammonia water is to be mixed with 300 Cc. (or 14 fl.ounces) of alcohol, and 600 Cc. (or 28 fl.ounces) of water. This is first used as a menstruum, and afterward alcohol and water mixed in the proportion of 1 measure of the former to 2 measures of the latter until the drug is exhausted. The first 750 Cc. (or 34½ fl. ounces) of the percolate are reserved and the remainder evaporated by water-bath to a soft extract and added, and enough alcohol and water mixed in the same proportion as last directed added to make the measure 1000 Cc. (or 46 fl.ounces). <U. S., p 141. F C F, p 471,

EXTRACTUM GOSSYPII RADICIS FLUIDUM. Fluid Extract of Cotton Root Bark.

Cotton root bark, in No. 30 powder, 1000 gm.(or 3 pounds av).
Glycerin, 250 Cc. (or 11½ fl.ounces).
Alcohol, a sufficient quantity to make 1000 Cc.(or 46 fl.ounces).

The glycerin is to be mixed with 750 Cc. (or 34½ fl.ounces) of alcohol and this used first as a menstruum, following it with alcohol until the drug is exhausted. The first 700 Cc. (or 32 fl. ounces) of the percolate are reserved, the remainder evaporated to a soft extract and added to the reserved portion, and then enough alcohol to make the measure 1000 Cc. (or 46 fl.ounces). <U. S., p 142. F C F, p 460, 487.

EXTRACTUM GRINDELIÆ FLUIDUM. Fluid Extract of Grindelia.

Grindelia, in No. 30 powder, 1000 gm. (or 3 pounds av.).

Alcohol, a sufficient quantity to make 1000 Cc. (or 46 fl. ounces).

Prepare a fluid extract as directed in the general formula. <U. S., p 142. F C F, p 464.

The menstruum directed in the former revision is alcohol 3 parts, water 1 part. by weight.

EXTRACTUM GUARANÆ FLUIDUM. Fluid Extract of Guarana.

Guarana, in No. 80 powder, 1000 gm. (or 3 pounds av).

Alcohol and water, each a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

Alcohol 3 measures with water 1 measure, are mixed and a fluid extract prepared as directed in the general formula. <U. S., p 142. F C F, p 464.

EXTRACTUM HAMAMELIDIS FLUIDUM. Fluid Extract of Hamamelis.

Hamamelis, in No. 40 powder, 1000 gm. (or 3 pounds av).

Glycerin 100 Cc. (4.6 fl.ounces).

Alcohol and water, of each, a sufficient quantity to make 1000 Cc. (or 40 fl.ounces).

The glycerin is to be mixed with 500 Cc. (or 23 fl.ounces) of alcohol and 800 Cc. (or 37 fl.ounces) of water and the drug is first to be percolated with this menstruum and then with alcohol and water mixed in the proportion of 2 measures of the former with 8 measures of the latter, and a fluid extract made as directed in the general formula. <U. S., p 143. F C F, p 478.

EXTRACTUM HYDRASTIS FLUIDUM. Fluid Extract of Hydrastis.

Hydrastis, in No. 60 powder, 1000 gm. (or 3 pounds av).

Glycerin 100 Cc. (or 4.6 fl.ounces).

Alcohol and water, of each, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

The glycerin is to be mixed with 600 Cc. (or 28 fl.ounces) of alcohol and 300 Cc. (or 14 fl.ounces) of water, and the drug is first to be percolated with this mixture, and then with a menstruum mixed in the proportion of 2 measures of alcohol with 1 measure of water until it is exhausted and a fluid extract made as directed in the general formula. <U. S., p 144. F C F, p 464.

The menstruum directed in the former revision was alcohol 3 parts, water 1 part, by weight, the present revision retains less of the resinous matter.

EXTRACTUM HYOSCYAMI FLUIDUM. Fluid Extract of Hyoscyamus.

Hyoscyamus, in No. 60 powder, 1000 gm. (or 3 pounds av.).

Alcohol and water, of each, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

Alcohol 2 measures with water 1 measure are to be mixed as a menstruum, and a fluid extract prepared as directed in the general formula. <U. S., p 145. F C F, p 467.

The temperature at which the percolate is evaporated should not exceed 50°C. (122°F.).

EXTRACTUM IPECACUANHÆ FLUIDUM. Fluid Extract of Ipecac.

Ipecac, in No. 80 powder, 1000 gm. (or 3 pounds av.).

Alcohol and water, each, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

Alcohol 3 measures and water 1 measure are mixed and the fluid extract made as directed in the general formula. <U. S., p 145. F C F, p 478.

The temperature at which the percolate is evaporated should not exceed 50°C. (122°F.).

It will be noted that the present formula is entirely different from the former official, and contains the resinous matter which was removed by the former method. This is, however, provided for, in the present official formulas in which it is used, by filtering out the resinous matter.

EXTRACTUM IRIDIS FLUIDUM. Fluid Extract of Iris.

Iris, in No. 60 powder, 1000 gm. (or 3 pounds av.).

Alcohol, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces)

Prepare a fluid extract as directed in the general formula. <U. S., p 146. F C F, p 464.

In the former revision a menstruum of 3 parts alcohol, with 1 part of water, was directed.

EXTRACTUM KRAMERIÆ FLUIDUM. Fluid Extract of Krameria.

Krameria, in No. 30 powder, 1000 gm. (or 3 pounds av.).
Glycerin 100 Cc. (or 4.6 fl.ounces).
Diluted alcohol, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

The glycerin is to be mixed with 1000 Cc. (or 42 fl.ounces) of diluted alcohol the drug is first to be percolated, with this and then with diluted alcohol until exhausted. The first 700 Cc. (or 32 fl.ounces) of the percolate is to be reserved and the remainder evaporated to a soft extract and added to the reserved portion, with enough diluted alcohol to make the measure 1000 Cc. (or 46 fl.ounces). <U. S., p 148. F C F, p 472.

EXTRACTUM LAPPÆ FLUIDUM. Fluid Extract of Lappa. *new.*

Lappa, in No. 60 powder, 1000 gm. (or 3 pounds av).
Diluted alcohol, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

Prepare a fluid extract as directed in the general formula. <U. S., p 149. F C F, p 475.

EXTRACTUM LEPTANDRÆ FLUIDUM. Fluid Extract of Leptandra.

Leptandra, in No. 60 powder, 1000 gm. (or 3 pounds av).
Alcohol and water, of each, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

Alcohol 3 measures with water 1 measure, are mixed and a fluid extract prepared as directed in the general formula. <U. S., p 149. F C F, p 472.

The former Pharm. directed a menstruum of diluted alcohol and glycerin.

EXTRACTUM LOBELIÆ FLUIDUM. Fluid Extract of Lobelia.

Lobelia, in No. 60 powder, 1000 gm. (or 3 pounds av).
Diluted alcohol, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

Prepare a fluid extract as directed in the general formula. <U. S., p 150. F C F, p 472.

The temperature at which the percolate is evaporated should not exceed 50°C. (122°F.).

EXTRACTUM LUPULINI FLUIDUM. Fluid Extract of Lupulin.

Lupulin, 1000 Cc. (or 3 pounds, av.).
Alcohol, a sufficient quantity to make 1000 Cc.(or 46 fl.ounces).

Prepare a fluid extract as directed in the general formula. U. S., p 150. F C F, p 460.

EXTRACTUM MATICO FLUIDUM. Fluid Extract of Matico.

Matico, in No. 40 powder, 1000 gm. (or 3 pounds av.).

Alcohol and water, of each, a sufficient quantity to make 1000 gm. (or 46 fl.ounces).

Alcohol 3 measures with water 1 measure are to be mixed as a menstruum, and a fluid extract prepared as directed in the general formula. <U. S., p 151. F C F, p 467.

The former revision directed 10 per cent. of glycerin in the menstruum.

EXTRACTUM MENISPERMI FLUIDUM. Fluid Extract of Menispermum. *new.*

Menispermum, in No. 60 powder, 1000 gm. (or 3 pounds av).

Alcohol and water, of each, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

Alcohol 2 measures with water 1 measure, are to be mixed and a fluid extract made as directed in the general formula. <U. S., p 151. F C F, p 465.

EXTRACTUM MEZEREI FLUIDUM. Fluid Extract of Mezereum.

Mezereum, in No. 30 powder, 1000 gm. (or 3 pounds av.).

Alcohol, a sufficient quantity to make 1000 Cc.(or 46 fl.ounces).

Prepare a fluid extract as directed in the general formula. <U. S., p 152. F C F, p 460.

The temperature at which the percolate is evaporated should not exceed 50°C. (122°F.).

EXTRACTUM NUCIS VOMICÆ FLUIDUM. Fluid Extract of Nux Vomica.

Nux Vomica, in No. 50 powder, 1000 gm. (or 3 pounds av).

Acetic acid 50 Cc. (or 2.3 fl.ounces).

Alcohol and water, of each, a sufficient quantity.

Alcohol 3 measures, with water 1 measure, are mixed, and to 1000 Cc. (or 46 fl.ounces) of the mixture the acetic acid is added. This is first used to moisten the drug, and the percolation continued with a mixture of alcohol and water as above, until the drug is exhausted. The alcohol is then to be recovered by distillation and the remainder evaporated by water-bath, in a tared (weighed) capsule, to about 200 gm. or 9.6 ounces, av., and allowed to cool. The exact weight is then determined, and 4 gm. of the mass assayed as directed for extract of nux vomica, and from the result the total amount of alkaloids in the whole mass is to be calculat-

ed. Alcohol 300 Cc. (or 13.8 fl.ounces) is then added to the remainder of the mass, and enough alcohol and water mixed in the proportion of three of the former to one of the latter, to make a fluid extract which shall contain in each 100 Cc. 1.5 gm. of total alkaloids. <U. S., p 154. F C F, p 464.

It will be noted that this fluid extract is made on an assay basis of 1.5 per cent. of total alkaloids, being one-tenth the strength of the solid extract. It may, therefore, be prepared by dissolving 1 part of the solid extract (U. S., 1890), in 9 parts of a menstruum of 4 measures of alcohol, with 1 measure of water.

EXTRACTUM PAREIRÆ FLUIDUM. Fluid Extract of Pareira.

Pareira, in No. 40 powder, 1000 gm. (or 3 pounds av.).
Glycerin 100 Cc. (or 4.6 fl.ounces).
Alcohol and water, each a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

The glycerin is to be mixed with 720 Cc.or 33 fl.ounces of alcohol and 180 Cc. or (8 fl.ounces of water), and this is to be used for moistening the drug and as the first menstruum for the percolation, to be followed with a menstruum made in the proportion of 4 measures of alcohol to 1 measure of water, until the drug is exhausted. The fluid extract is then prepared as directed in the general formula. <U. S., p 157. F C F, p 472.

EXTRACTUM PHYTOLACCÆ RADICIS FLUIDUM. Fluid Extract of Phytolacca Root. *new.*

Phytolacca root, in No. 60 powder, 1000 gm. (or 3 pounds av).
Alcohol and water, of each, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

Alcohol 2 measures and water 1 measure are mixed and the fluid extract made as directed in the general formula. <U. S., p 157. F C F, p 469.

The temperature at which the percolate is evaporated should not exceed 50 C. (122°F.).

EXTRACTUM PILOCARPI FLUIDUM. Fluid Extract of Pilocarpus.

Pilocarpus, in No. 40 powder, 1000 gm. (or 3 pounds av.).
Diluted alcohol, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

Prepare a fluid extract as directed in the general formula. <U. S., p 158. F C F, p 472.

The temperature at which the percolate is evaporated should not exceed 50°C. (122°F.).

EXTRACTUM PODOPHYLLI FLUIDUM. Fluid Extract of Podophyllum.

Podophyllum, in No. 60 powder, 1000 gm. (or 3 pounds av).
Alcohol and water, of each, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

Alcohol 4 measures, with water 1 measure, are mixed as a menstruum, and a fluid extract prepared as directed in the general formula. <U. S., p 159. F C F, p 464.

EXTRACTUM PRUNI VIRGINIANÆ FLUIDUM. Fluid Extract of Wild Cherry.

Wild Cherry, in No. 20 powder, 1000 gm. (or 3 pounds av).
Glycerin, 100 Cc. (or 4.6 fl.ounces).
Alcohol and water, each, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

The glycerin is to be mixed with 200 Cc. (or 9,2 fl.ounces) of water and the drug is to be moistened with the mixture, packed firmly in a percolator, closely covered, and allowed to macerate for 48 hours. It is then to be percolated with a menstruum composed of 85 measures of alcohol mixed with 15 measures of water, until exhausted. The first 800 Cc. (or 37 fl.ounces) of the percolate are to be reserved and the remainder evaporated at a temperature not exceeding 50° C. (122° F.) to a soft extract, which is to be dissolved in the reserved portion, and menstruum as last directed, added, to make the measure 1000 Cc. (or 46 fl.ounces). <U. S., p 159. F C F, p 478.

The former revision directed diluted alcohol for the percolation instead of the stronger alcoholic liquid of the present Pharm.

EXTRACTUM QUASSIÆ FLUIDUM. Fluid Extract of Quassia.

Quassia, in No. 60 powder, 1000 gm. (or 3 pounds av).
Alcohol and water, of each, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

Alcohol 1 measure with water 2 measures, are mixed and a fluid extract prepared as directed in the general formula. <U. S., p 150. F C F, p 479.

The menstruum directed in the former revision, for making this extract, was diluted alcohol.

EXTRACTUM RHAMNI PRUSHIANÆ FLUIDUM. Fluid Extract of Rhamnus Prushiana. *new.*

Rhamnus Prushiana, in No.60 powder, 1000 gm.(or 3 pounds av)

Diluted alcohol, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

Prepare a fluid extract as directed in the general formula. <U. S., p 161. F C F, p 473, 476, 490.

The so called tasteless extracts of cascara sagrada, are prepared by exhausting the drug with a menstruum of hot water, in which some alkaline salt has been added, as carbonate or bicarbonate of sodium or potassium, or ammonia water; after condensing by evaporation, 30 per cent. of alcohol is added as a preservative.

EXTRACTUM RHEI FLUIDUM. Fluid Extract of Rhubarb.

Rhubarb, in No. 30 powder, 1000 gm. (or 3 pounds av).

Alcohol and water, of each, a sufficient quantity to make 1000 gm. (or 46 fl.ounces).

Alcohol 4 measures with water 1 measure are to be mixed as a menstruum, and a fluid extract prepared as directed in the general formula. <U. S., p 162. F C F, p 467.

In the former revision, alcohol 2 parts, to water 1 part, by weight, was the menstruum directed.

EXTRACTUM RHOIS GLABRÆ FLUIDUM. Fluid Extract of Rhus Glabra.

Rhus Glabra, in No. 40 powder, 1000 gm. (or 3 pounds av.).

Glycerin 100 Cc. (or 4.6 fl.ounces).

Diluted alcohol, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

The glycerin is to be mixed with 900 Cc. (or 42 fl.ounces) of diluted alcohol and first used as a menstruum, the percolation is then to be continued with diluted alcohol until the drug is exhausted, and a fluid extract made as directed in the general formula. <U. S., p 163. F C F, p 472.

EXTRACTUM ROSÆ FLUIDUM. Fluid Extract of Rose.

Red Rose, in No. 30 powder, 1000 gm. (or 3 pounds av).

Glycerin, 100 Cc. (or 4.6 fl.ounces).

Diluted alcohol, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

The glycerin is to be mixed with 900 Cc. (or 42 fl.ounces) of diluted alcohol and first used as a menstruum, the percolation is then to be continued with diluted alcohol until the drug is exhausted, and a fluid extract made as directed in the general formula. <U. S., p 163. F C F, p 472.

The temperature at which the percolate is evaporated should not exceed 50°C. (122° F.).

EXTRACTUM RUBI FLUIDUM. Fluid Extract of Rubus.

Rubus, in No. 60 powder, 1000 gm. (or 3 pounds av.).

Glycerin, 100 Cc. (or 4.6 fl.ounces).

Alcohol and water, of each, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

The glycerin is to be mixed with 600 Cc. (or 28 fl.ounces) of alcohol and 300 Cc. (or 14 fl.ounces) of water, and the drug percolated first with the mixture and then with alcohol 2 measures mixed with water 1 measure until it is exhausted. The fluid extract is then to be completed as directed in the general formula. <U. S., p 163. F C F, p 472.

EXTRACTUM RUMICIS FLUIDUM. Fluid Extract of Rumex.

Rumex, in No. 40 powder, 1000 gm. (or 3 pounds av.).

Diluted alcohol, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

Prepare a fluid extract as directed in the general formula. <U. S., p 164. F C F, p 472.

EXTRACTUM SABINÆ FLUIDUM. Fluid Extract of Savine.

Savine, in No. 40 powder, 1000 gm. (or 3 pounds av).

Alcohol, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces)

Prepare a fluid extract as directed in the general formula. U. S., p 164. F C F, p 460.

The temperature at which the percolate is evaporated should not exceed 50°C. (122°F.).

EXTRACTUM SANGUINARIÆ FLUIDUM. Fluid Extract of Sanguinaria.

Sanguinaria, in No. 60 powder, 1000 gm. (or 3 pounds av.).

Acetic acid, 50 Cc. (or 2.3 fl.ounces).

Alcohol and water, of each, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

Alcohol 3 measures with water 1 measure are to be mixed and the acetic acid added to 300 Cc. (or 14 fl.ounces) of the mixture, which is used to moisten the drug. A fluid extract is then to be prepared as directed in the general formula. <U. S., p 165. F C F, p 460.

In the former revision, alcohol was the menstruum directed to be used.

EXTRACTUM SARSAPARILLÆ FLUIDUM. Fluid Extract of Sarsaparilla.

Sarsaparilla, in No. 30 powder, 1000 gm. (or 3 pounds av).

Alcohol and water, of each, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

Alcohol 1 measure, with water 2 measures, are mixed as a menstruum, and a fluid extract prepared as directed in the general formula. <U. S., p 165. F C F, p 478.

The former revision directed 10 per cent. of glycerin in the menstruum.

EXTRACTUM SARSAPARILLÆ FLUIDUM COMPOSITUM. Compound Fluid Extract of Sarsaparilla.

Sarsaparilla, in No. 30 powder, 750 gm. (or 36 ounces av).
Glycyrrhiza, in No. 30 powder, 120 gm. (or 5¾ ounces av).
Sassafras, in No. 30 powder, 100 gm. (or 4.8 ounces av).
Mezereum, in No. 30 powder, 30 gm. (or 1 ounce av. + 192 grains).
Glycerin 100 Cc. (or 4.6 fl.ounces).
Alcohol and water, each a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

The glycerin is to be mixed with 300 Cc. (or 14 fl.ounces) of alcohol and 600 Cc. (or 28 fl.ounces) of water, this is first used as a menstruum, following it with alcohol 1 measure mixed with water 2 measures as a menstruum, and a fluid extract is made as directed in the general formula. <U. S., p 166. F C F, p 484.

EXTRACTUM SCILLÆ FLUIDUM. Fluid Extract of Squill.

Squill, in No. 20 powder, 1000 gm. (or 3 pounds av).
Alcohol and water, each, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

Alcohol 3 measures and water 2 measures are mixed and the fluid extract made as directed in the general formula. <U. S., p 167. F C F, p 460.

The former revision directed alcohol as the menstruum for preparing this fluid extract.

EXTRACTUM SCOPARII FLUIDUM. Fluid Extract of Scoparius. *new.*

Scoparius, in No. 60 powder, 1000 gm. (or 3 pounds av).
Diluted alcohol, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

Prepare a fluid extract as directed in the general formula. <U. S., p 167.

EXTRACTUM SCUTELLARIÆ FLUIDUM. Fluid Extract of Scutellaria.

Scutellaria, in No. 40 powder, 1000 gm. (or 3 pounds av).
Diluted alcohol, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

In the former revision, alcohol 1 part, to water 2 parts, by weight, was the menstruum directed.

EXTRACTUM SENEGÆ FLUIDUM. Fluid Extract of Senega.

Senega, in No. 40 powder, 1000 gm. (or 3 pounds av.).
Ammonia water 50 Cc. (or 2.3 fl.ounces).
Alcohol and water, of each, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

The ammonia water is to be mixed with 750 Cc. (or 34½ fl. ounces) of alcohol and 200 Cc. (or 9.2 fl.ounces) of water. This is first used as a menstruum, and afterwards alcohol and water mixed in the proportion of 3 measures of the former to 1 measure of the latter, until the drug is exhausted. The first 850 Cc. (or 39 fl.ounces) of the percolation are reserved, and the remainder evaporated to a soft extract which is to be dissolved in the reserved portion and enough menstruum, as last directed, added to make the measure 1000 Cc. or 46 fl.ounces. U. S., p 168. F C F, p 467.

EXTRACTUM SENNÆ FLUIDUM. Fluid Extract of Senna.

Senna, in No. 30 powder, 1000 gm. (or 3 pounds av).
Diluted alcohol, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

Prepare a fluid extract as directed in the general formula. <U. S., p 169. F C F, p 464.

EXTRACTUM SERPENTARIÆ FLUIDUM. Fluid Extract of Serpentaria.

Serpentaria, in No. 60 powder, 1000 gm. (or 3 pounds av.).
Alcohol and water, of each, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

Alcohol 4 measures with water 1 measure are to be mixed as a menstruum, and a fluid extract prepared as directed in the general formula. <U. S., p 169. F C F, p 464.

EXTRACTUM SPIGELIÆ FLUIDUM. Fluid Extract of Spigelia.

Spigelia, in No. 60 powder, 1000 gm. (or 3 pounds av.).
Diluted alcohol, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

Prepare a fluid extract as directed in the general formula. <U. S., p 170. F C F, p 47

EXTRACTUM STILLINGIÆ FLUIDUM. Fluid Extract of Stillingia.

Stillingia, in No. 40 powder, 1000 gm. (or 3 pounds av).

Diluted alcohol, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

Prepare a fluid extract as directed in the general formula. <U. S., p 170. F C F, p 472.

EXTRACTUM STRAMONII SEMINIS FLUIDUM. Fluid Extract of Stramonium Seed. EXTRACTUM STRAMONII FLUIDUM, PHARM. 1880.

Stramonium Seed, in No. 60 powder, 1000 gm. (or 3 pounds av.).

Alcohol and water, of each, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

Alcohol 3 measures, with water 1 measure are to be mixed as a menstruum, and a fluid extract prepared as directed in the general formula. <U. S., p 171. F C F, p 467.

The temperature at which the percolate is evaporated should not exceed 50°C. (122°F.).

The former revision directed a menstruum of alcohol 2 parts, with water 1 part, by weight, for preparing this fluid extract.

EXTRACTUM TARAXACI FLUIDUM. Fluid Extract of Taraxacum.

Taraxacum, in No. 30 powder, 1000 gm. (or 3 pounds av).

Diluted alcohol, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

Prepare a fluid extract as directed in the general formula. <U. S., p 173. F C F, p 479.

The former revision directed a menstruum of 2 parts, by weight, of alcohol with 1 part of water, for preparing this fluid extract.

EXTRACTUM TRITICI FLUIDUM. Fluid Extract of Triticum.

Triticum, finely cut, 1000 gm. (or 3 pounds av.).

Alcohol and water, each, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

First percolate the triticum with boiling water until it is exhausted, then evaporate the percolate to 750 Cc. (or 34½ fl.ounces) and add to the liquid 250 Cc. or 11½ fl.ounces of alcohol, set aside for 48 hours, then filter and add to the filtrate enough of a mixture of alcohol 1 measure, with water 3 measures, to make 1000 Cc. or 46 fl.ounces. <U. S., p 173.

EXTRACTUM UVÆ URSI FLUIDUM. Fluid Extract of Uva Ursi.

Uva Ursi, in No. 30 powder, 1000 gm. (or 3 pounds av).

Glycerin, 300 Cc. (or 13.8 fl.ounces).

Alcohol and water, of each, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

The glycerin is to be mixed with 200 Cc. (or 9.2 fl.ounces) of alcohol and 500 Cc. (or 23 fl.ounces) of water. This menstruum is first to be used to moisten and percolate the drug, and followed with a menstruum of alcohol 2 measures, mixed with water 5 measures, until the drug is exhausted. The fluid extract is then to be completed as directed in the general formula. <U. S., p 174. F C F, p 472.

In the former revision, 10 per cent. by weight, of glycerin was directed with diluted alcohol as the menstruum.

EXTRACTUM VALERIANÆ FLUIDUM. Fluid Extract of Valerian.

Valerian, in No. 60 powder, 1000 gm. (or 3 pounds av).

Alcohol and water, each a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

Alcohol 3 measures, with water 1 measure are to be mixed as a menstruum, and a fluid extract prepared as directed in the general formula. <U. S., p 174. F C F, p 467.

The former revision directed alcohol 2 parts by weight, with water 1 part, as the menstruum for preparing this fluid extract.

EXTRACTUM VERATRI VIRIDIS FLUIDUM. Fluid Extract of Veratrum Viride.

Veratrum Viride, in No. 60 powder, 1000 gm. (or 3 pounds av).

Alcohol, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces)

Prepare a fluid extract as directed in the general formula. <U. S., p 175. F C F, p 460, 487.

EXTRACTUM VIBURNI OPULI FLUIDUM. Fluid Extract of Viburnum Opulus. *new.*

Viburnum Opulus, in No. 40 powder, 1000 gm. (or 3 pounds av)

Alcohol and water, of each, a sufficient quantity to make 1000 gm. (or 46 fl.ounces).

Alcohol 3 measures and water 1 measure are mixed and the fluid extract made as directed in the general formula. <U. S., p 175. F C F, p 469.

EXTRACTUM VIBURNI PRUNIFOLII FLUIDUM. Fluid Extract of Viburnum Prunifolium.

Viburnum Prunifolium, in No. 60 powder, 1000 gm. (or 3 pounds av).

Alcohol and water, of each, a sufficient quantity to make 1000 Cc. (or 46 fl.ounces).

Alcohol 3 measures with water 1 measure, are mixed and a fluid extract prepared as directed in the general formula. <U. S., p 176. F C F, p 467.

In the former revision this had the title Fluid Extract of Viburnum, but the introduction of another formula requires the variety to be designated. The menstruum in the former revision, was alcohol 2 parts by weight, mixed with water 1 part,

EXTRACTUM XANTHOXYLI FLUIDUM. Fluid Extract of Xanthoxylum.

Xanthoxylum, in No. 40 powder, 1000 gm. (or 3 pounds av).

Alcohol, a sufficient quantity to make 1000 Cc.(or 46 fl.ounces)

Prepare a fluid extract as directed in the general formula. <U. S., p 176. F C F, p 460.

EXTRACTUM ZINGIBERIS FLUIDUM. Fluid Extract of Ginger.

Ginger, in No. 40 powder, 1000 gm. (or 3 pounds av).

Alcohol, a sufficient quantity to make 1000 Cc.(or 46 fl.ounces).

Prepare a fluid extract as directed in the general formula. <U. S., p 177. F C F, p 460.

The temperature at which the percolate is evaporated should not exceed 50°C. (122°F.).

EXTRACTS AND FLUID EXTRACTS. The foregoing formulas for extracts and fluid extracts represent those official in the present Pharmacopœia. They are but a small part, although the most important, of those furnished by manufacturing pharmacists. In FENNER'S COMPLETE FORMULARY, will be found a complete list of the preparations made by manufacturers, and in demand more or less by the trade; the various processes for preparing them, and formulas are also given. It may be noted here, that the method of preparing fluid extracts by water-bath percolation, is the most effective and economical of any that has been introduced. By percolating with a warm menstruum, much less of the menstruum is required to exhaust the drug, and the subsequent distillation or evaporation requires much less outlay of time, and expense of material. For details of this process <F C F, p 442, 458.

FEL BOVIS PURIFICATUM. Purified Oxgall. Fresh oxgall, 300 Cc. (or 10 fl.ounces), alcohol, 100 Cc. (or 5 fl.ounces). The oxgall is to be evaporated in a tared (weighed) porcelain capsule, on a water-bath, to about 100 gm. (or 3½ fl.ounces), the alcohol is then to be added and mixed and the mixture set aside in a covered vessel for 3 or 4 days. The clear portion is then to be decanted, the remainder filtered and mixed with the clear portion, the alcohol distilled and the residue evaporated to pilular consistence. <U. S., p 178. F C F, p 497.

Fel Bovis Inspissatum of the former Pharm. is dismissed.

FERRI CARBONAS SACCHARATUS. Saccharated Carbonate of Iron. Ferrous sulphate, 50 gm. (or 5 ounces); sodium bicarbonate, 35 gm. (or 3½ ounces); sugar in fine powder; distilled water, each, a sufficient quantity to make 100 gm. (or 10 ounces). The iron and sodium salts are dissolved separately in distilled water at a temperature not exceeding 50° C. (122° F.), and the solutions filtered. The sodium solution is then placed in a flask having the capacity of 1000 Cc. (or 100 ounces), and the iron solution gradually added and mixed, and the precipitate washed by repeatedly filling the bottle with hot distilled water, and pouring off the clear fiuid after the precipitate has subsided. The precipitate is finally drained on a muslin strainer and transferred to a porcelain capsule containing 80 gm. (or 4 ounces) of sugar, and the whole evaporated to dryness by means of a water-bath, and reduced to a powder, adding, if necessary, enough sugar to make the weight 100 gm. (or 10 ounces). <U. S., p 178. F C F, p 500.

FERRI CHLORIDUM. Ferric Chloride. $Fe_2Cl_6+12H_2O$. Iron, in the form of fine, bright wire, and cut in small pieces, 15 gm. (or 1½ ounce), hydrochloric acid, nitric acid, and distilled water, each, a sufficient quantity. The iron wire is placed in a flask of about 200 Cc. (or 20 ounces) capacity, and 54 gm. (or 5.4 ounces) of hydrochloric acid, diluted with 25 Cc. (or 2½ ounces) of distilled water poured upon it. The mixture is set in a moderately warm place until effervescence ceases, and is then heated to boiling and filtered through paper, rinsing the flask and iron wire with a little hot distilled water and passing the rinsings through the filter. To the filtered liquid 28 gm. (or 2.8 ounces) of hydrochloric acid are added and then slowly and gradually this mixture is added in a stream to 8 gm. (or 0.8 ounce) of nitric acid contained in a capacious porcelain vessel, and the contents slightly warmed. After effervescence has ceased, apply heat by sand-bath until the liquid is free from nitrous odor. Then test with potassium ferricyanide test solution and if any blue color is produced add a little nitric acid drop by drop as long as it effervesces, and evaporate off the excess. Then add 5 gm. (or ½ ounce) of hydrochloric acid and enough distilled water to make the whole weigh 60 gm. (or 6 ounces), and set aside, covered with glass, until it forms a crystalline mass. <U. S., p 179. F C F, p 501.

This salt is freely soluble in water and alcohol. It melts at 35.5°C. (96°F.). It is deliquescent in moist air, and must therefore be kept closely stopped. It is used as a styptic, in solution, for gargles and washes, etc.

FERRI CITRAS. Ferric Citrate. CITRATE OF IRON, PHARM. 1880. Solution of citrate of iron, a convenient quantity. The solution is to be evaporated on a water-bath at a temperature not exceeding 60° C. (140° F.), to the consistence of syrup and spread upon plates of glass so that, when dry, it may be obtained in scales. <U. S., p 180. F C F, p 501.

The former revision gave to this preparation the formula, $Fe_2(C_6H_5O_7)_2+6H_2O$, but in the present Pharm. no chemical formula is given. It is slowly soluble in cold water, readily soluble in hot water, but insoluble in alcohol.

FERRI ET AMMONII CITRAS. Iron and Ammonium Citrate. Solution of ferric citrate, 100 Cc. (or 10 fl.ounces), ammonia water 40 Cc. (or 4 fl.ounces). The solution of ferric citrate is to be mixed with the ammonia water and the mixture evaporated by means of a water-bath at a temperature not exceeding 60° C. (140° F.), to the consistence of syrup and spread upon plates of glass so that, when dry, it may be obtained in scales. <U. S., p 181. F C F, p 502.

The former revision directed 3 parts by weight, of the solution of citrate of Iron to be mixed with water of ammonia 1 part. This is known as the "Soluble Citrate of Iron," and is freely soluble in water, but insoluble in alcohol. It is much used in elixirs, etc.

FERRI ET AMMONII SULPHAS. Ferric Ammonium Sulphate. AMMONIO-FERRIC SULPHATE; AMMONIO-FERRIC ALUM. $Fe_2(NH_4)_2(SO_4)_4+24H_2O$.

This salt is soluble in 3 parts of water at N T, and in 0.8 part of boiling water. It is insoluble in alcohol.

FERRI ET AMMONII TARTRAS. Iron and Ammonium Tartrate. AMMONIO-FERRIC TARTRATE. Solution of ferric sulphate 100 Cc. (or 10 fl.ounces), tartaric acid 29 gm. (or 3 ounces av.), distilled water 200 Cc. (or 20 fl.ounces), ammonia water, and water of each, a sufficient quantity. Ammonia water 110 Cc. (or 11 fl ounces) is to be diluted with 250 Cc. (or 25 fl.ounces) of cold water and to the mixture is to be added slowly and with constant stirring the solution of ferric sulphate previously diluted with 1300 Cc. (or 130 fl.ounces) of cold water. The precipitate is allowed to subside and the clear liquid drawn off with a siphon, and the precipitate washed repeatedly by pouring on fresh water and drawing off the clear liquid after the precipitate has subsided. The precipitate is then to be transferred to a muslin strainer, drained and expressed as dry as possible. One-half of the tartaric acid is then to be dissolved in the distilled water, the solution exactly neutralized with ammonia, the remaining half of the tartaric

acid added and dissolved by the aid of gentle heat. The moist ferric sulphate is then to be added in portions stirring constantly and continuing the heat, which should not exceed 60° C. (140° F.), until the hydrate is dissolved. The solution is to be filtered while hot, and the filtrate evaporated to the consistence of syrup and spread upon plates of glass so that, when dry, the salt may be obtained in scales. <U. S., p 183. F C F, p 503.

This salt is very soluble in water, but insoluble in alcohol.

FERRI ET POTASSII TARTRAS. Iron and Potassium Tartrate. Solution of ferric sulphate 100 Cc. (or 10 fl.ounces), potassium bitartrate 38 gm. (or 4 ounces av), distilled water 300 Cc. (or 30 fl.ounces), ammonia water, and water, of each, a sufficient quantity. The ferric hydrate precipitate is formed and washed in the same general manner as in the preceding formula. The potassium bitartrate is dissolved in the distilled water by the aid of heat, and the moist ferric hydrate dissolved in the solution as in the preceding formula. The solution is filtered and the filtrate allowed to stand in a cool place for 24 hours, during which a precipitat forms. It is then stirred and enough ammonia water carefully added to just dissolve the precipitate. It is then evaporated and a scale salt prepared as directed in the foregoing formula. <U. S., p 184. F C F, p 504.

This salt is very soluble in water, but insoluble in alcohol.

FERRI ET QUININÆ CITRAS. Iron and Quinine Citrate. Ferric citrate 85 gm. (or 8½ ounces), quinine dried at 100° C. (212° F.), to a constant weight, 12 gm. (or 1.2 ounces), citric acid 3 gm. (or 0.3 ounce), distilled water a sufficient quantity to make 100 gm. (or 10 ounces). The citrate of iron is to be dissolved on a water-bath at a heat not exceeding 60° C. (140° F.), in 160 Cc. (or 16 ounces) of distilled water. To this solution the quinine and the citric acid previously triturated with 20 Cc. (or 2 ounces) of water, are to be added and stirred until they are dissolved. The solution is then to be evaporated at the above mentioned temperature to the consistence of syrup and spread upon glass plates to dry, so that a scale salt may be produced. <U. S., p 185. F C F, p 502.

This salt is slowly soluble in cold water, but more readily in hot water; slightly soluble in alcohol.

FERRI ET QUININÆ CITRAS SOLUBILIS. Soluble Iron and Quinine Citrate. *new.* The ingredients directed in this formula are the same as in the preceding except that ammonia

water, a sufficient quantity, is added and the manipulation the same until the quinine and citric acid are dissolved. Then there is added, gradually, and with constant stirring 50 Cc. (or 5 ounces) of ammonia water or a sufficient quantity so that after adding each portion of the latter the precipitated quinine will be redissolved, and the liquid acquire a greenish-yellow tint. This solution is then evaporated to the consistence of syrup and spread on plates of glass so as to make a scale salt when dry.

This salt is a new addition to the official list. and must be appreciated by druggists. It is readily soluble in cold water, but only partly soluble in alcohol. It contains about 10 per cent. of dry quinine.

FERRI ET STRYCHNINÆ CITRATE. Iron and Strychnine Citrate. Iron and ammonium citrate 98 gm. (or 490 grains) strychnine 1 gm. (or 5 grains), citric acid 1 gm. (or 5 grains), distilled water 120 Cc. (or 11 fl.drachms). The iron and ammonium citrate is to be dissolved in the water and the strychnine and citric acid rubbed together with 20 Cc. (or 2 drachms) of distilled water. The two solutions are to be mixed and the mixture evaporated at a temperature not exceeding 60° C. (140° F.) to the consistence of a syrup and spread upon glass plates to make a scale salt when dry. <U. S., p 187. F C F, p 502.

This salt is readily soluble in water, but only partly soluble in alcohol.

FERRI HYPOPHOSPHIS. Ferric Hypophosphite. $Fe_2(PH_2O_2)_6$

Slightly soluble in water, but requires the presence of hypophosphorous acid to assist solution. Also soluble in solutions of alkali citrates. <U. S., p 189. F C F, p 505.

FERRI IODIDUM SACCHARATUM. Saccharated Ferrous Iodide. Iron, in the form of bright wire, and cut into small pieces, 6 gm. (or 60 grains), reduced iron 1 gm. (or 10 grains), iodine 17 gm. (or 170 grains), distilled water, sugar of milk, recently dried, each, a sufficient quantity to make 100 gm. (or 1000 grains=2 ounces av. + 125 grains). The iron and iodine with 20 Cc. (or 3⅓ fl.drachms) of distilled water are put in a thin glass flask and shaken occasionally until the reaction ceases and the solution has acquired a green color and lost the smell of iodine. It is then filtered through a small wetted filter into a porcelain capsule containing 40 gm. (or 400 grains) of sugar of milk. The flask and the iron wire are rinsed with a little distilled water and the rinsings passed through the filter into the capsule. The whole is then heated on a water-bath with frequent stirring until a dry mass remains. This is to be immediately powdered in a heated

iron mortar and mixed intimately by trituration with the reduced iron and enough sugar of milk to make the final product weigh 100 gm. (or 1000 grains). <U. S., p 189. F C F, p 505.

This differs from the former official by the addition of reduced iron. It is soluble in 7 parts of water, but does not form an entirely clear solution. It is only partially soluble in alcohol.

FERRI LACTAS. Ferrous Lactate. LACTATE OF IRON. $Fe(C_3H_5O_3)_2+3H_2O$.

Soluble slowly, but completety, in 40 parts of water at N T, and in 12 parts of boiling water; nearly insoluble in alcohol; freely soluble in a solution of alkali citrates. <U. S., p 190. F C F, p 506.

FERRI OXALAS. Ferrous oxalate, which was official in the last Pharm. has been dismissed. <F C F, p 507.

FERRI OXIDUM HYDRATUM. Ferric Hydrate. HYDRATED OXIDE OF IRON. $Fe_2(OH)_6$. Solution of ferric sulphate 100 Cc. (or 10 fl.ounces), ammonia water, 110 Cc. (or 11 fl.ounces), water a sufficient quantity. The ammonia water is to be diluted with 250 Cc. (or 25 fl.ounces) of cold water, and the solution of ferric sulphate previously diluted with 1000 Cc. (or 100 fl.ounces) of cold water, is to be added gradually to it with constant stirring. The precipitate which subsides is to be washed repeatedly with cold water, by pouring off the clear liquid and adding fresh water to the precipitate, and finally poured upon a muslin strainer, drained and pressed, and mixed with sufficient water to make the whole weigh 250 gm. (or 25 ounces). <U. S., p 191. F C F, p 507.

"When ferric hydrate is to be made in haste, for use as an antidote, the washing may be performed more quickly, though less perfectly, by transferring the the precipitate at once to a wet muslin strainer, pressing forcibly with the hands, until no more liquid passes, and then adding enough water to make the whole weigh 250 gm.(or 25 ounces)." "Note: The ingredients for preparing ferric hydrate as an antidote (for arsenic poisoning), should always be kept on hand in bottles containing, respectively, 200 Cc. (or 6¾ fl.ounces) of the solution of ferric sulphate, and 220 Cc. (or 7½ fl.ounces) of ammonia water."

FERRI OXIDUM HYDRATUM CUM MAGNESIA. Ferric Hydrate with Magnesia. ARSENIC ANTIDOTE. Solution of ferric sulphate 50 Cc. (or 1.7 fl.ounces), magnesia 10 gm. (or 154 grains), water a sufficient quantity. The solution of ferric sulphate is to be diluted with 100 Cc. (or 3⅜ fl.ounces) of water, and kept on hand in a large, well stoppered bottle. The magnesia is to be rubbed with cold water to a smooth and thin mixture and transferred to a bottle of about 1000 Cc. (or 34 fl.ounces) capacity, which is then to be about three-fourths filled with water. These two preparations are to be labelled and kept on hand and when

wanted for use the magnesia mixture is to be vigorously shaken and added gradually to the iron solution and the whole shaken together until a uniform mixture results. In poisoning by arsenic this is to be freely given, the whole quantity being used if necessary. <U. S., p 191. F C F, p 508.

FERRI PHOSPHAS SOLUBILIS. Soluble Ferric Phosphate. Ferric citrate 50 gm. (or 5 ounces), sodium phosphate uneffloresced 55 gm. (or 5½ ounces), distilled water 100 Cc. (or 10 ounces). The ferric citrate is to be dissolved in the distilled water by heating on a water-bath; the sodium phosphate is to be added to the solution and stirred constantly until it is dissolved. The solution is then to be evaporated on a water-bath at a temperature not exceeding 60° C. (140° F.), to the consistence of thick syrup, and spread upon glass plates so that when dry the salt may be obtained in scales. <U. S., p 192. F C F, 508.

The change of the name in this preparation will be noted. It was introduced in the 6th revision under the title Ferri Phosphas,—Phosphate of Iron. The change was probably made in this revision to distinguish it from the former official slate-blue powder known as Phosphate of Iron (Ferrous Phosphate). The proportion of sodium Phosphate is slightly decreased in the present Pharm.

This salt is freely soluble in water but insoluble in alcohol. It is not, like pyrophosphate of iron, deposited or gelatinized in the presence of quite dilute acids.

FERRI PYROPHOSPHAS SOLUBILIS. Soluble Ferric Pyrophosphate. Ferric citrate 50 gm. (or 5 ounces), sodium pyrophosphate uneffloresced 50 gm. (or 5 ounces), distilled water 100 Cc. (or 10 ounces). The ferric citrate is to be dissolved in the distilled water by the heat of a water-bath. The sodium pyrophosphate is to be added to the solution and stirred until dissolved. The solution is then to be evaporated on a water-bath to the consistence of thick syrup and spread upon glass plates to dry so that the salt may be obtained in scales. <U. S., p 193. F C F, 509.

The change of title of this preparation will be noted, also a slight decrease in the proportion of sodium pyrophosphate. This salt is quite sensitive to dilute acids, being precipitated by them.

FERRI SULPHAS. Ferrous Sulphate. $FeSO_4+7H_2O$.

This salt is commonly called "copperas" in its impure condition. The pure ferrous sulphate or sulphate of iron which is intended as the official salt, is soluble in 1.8 parts of water at N T, and in 0.3 part of boiling water, but insoluble in alcohol. <U. S., p 193. F C F, p 509.

FERRI SULPHAS EXSICCATUS. Dried Ferrous Sulphate. Approximately $2FeSO_4+3H_2O$. Ferrous sulphate in coarse pow-

der 100 gm. (or any convenient quantity). The salt is kept for some time at about 40° C. (104° F.) in the air, allowing it to effloresce and then heated in a porcelain dish on a water-bath, constantly stirring until the product weighs from 64 to 65 gm., or has slightly less than two-thirds its original weight. This is then reduced to a fine powder and kept in well-stopped bottles. <U. S., p 194. F C F, p 510.

It will be observed that the degree of heat directed is much less than in the former Pharm., and the product must necessarily contain more moisture than the former official preparation, which yielded about 61 per cent. of the quantity taken. It is slowly but completely soluble in water.

FERRI SULPHAS GRANULATUS. Granulated Ferrous Sulphate. FERRI SULPHAS PRÆCIPITATUS, PHARM. 1880. $FeSO_4 + 6H_2O$. Ferrous sulphate 100 gm. (or 10 ounces), distilled water 100 gm. (or 10 ounces), diluted sulphuric acid 5 Cc. (or ½ fl. ounce), alcohol 25 Cc. (or 2½ fl.ounces). The ferrous sulphate is to be dissolved in the distilled water previously heated to boiling and the sulphuric acid added. The solution is then to be filtered while hot and immediately evaporated in a tared (weighed) porcelain capsule, on a sand-bath to 150 gm. (or 15 ounces). It is then to be quickly cooled, stirring constantly, and then transferred to a glass funnel, stopped with a plug of absorbent cotton, and allowed to drain. When thoroughly drained the alcohol is to be poured upon it and when drained again it is to be spread on bibulous paper and quickly dried at ordinary temperature, transferred to dry bottles and closely stopped. <U. S., p 194. F C F, p 510.

The process for making is quite different than in the 6th revision, but the resultant preparation is about the same. Note the change of title of this preparation. This salt is really identical with ferrous sulphate, only being in granular form. It has no advantages over pure ferrous sulphate.

FERRI VALERIANAS. Ferric Valerianate.

This salt, which is known as valeriante of iron, is insoluble in cold water, but readily soluble in alcohol. No chemical formula is assigned it in the present Pharm, but the 6th revision gave it $Fe_2(C_5H_9O_2)_6$. <U. S., p 195. F C F, p 511.

FERRUM. Iron. Fe. Metallic iron in the form of fine, bright and non-elastic wire. <U. S., p 195. F C F, p 498.

FERRUM REDUCTUM. Reduced Iron.

Iron in the form of a very fine black lusterless powder; insoluble in water or alcohol. <U. S., p 195. F C F, p 499.

GLYCERINUM. Glycerin. "A liquid obtained by the decomposition of vegetable or animal fats or fixed oils, and containing

not less than 95 per cent. of absolute glycerin, $C_3H_5(OH)_3$." <U. S.. p 198. F C F, p 516.

The sp. gr. of glycerin should be not less than 1.250 at N T. It is soluble in all proportions in water or in alcohol, but insoluble in ether, chloroform, benzin, benżol or oils. Commercial glycerin varies in sp. gr. the best being known as 18 , while a 16° glycerin is sold at little less.

GLYCERITA. Glycerites. In the present revision, six glycerites are given, being four more than were official in the 1880 Pharm. Two of those newly introduced were official in the 1870 Pharm. viz: Glyceritum Acidi Carbolici, and Glyceritum Acidi Tannici.

GLYCERITUM ACIDI CARBOLICI. Glycerite of Carbolic Acid. *new*. Carbolic acid 20 gm. (or 2 ounces), glycerin 80 gm. (or 8 ounces). The carbolic acid is to be weighed into a tared (weighed) capsule, the glycerin added and the whole stirred together until the acid is dissolved. <U. S., p 199. F C F, p 517.

GLYCERITUM ACIDI TANNICI. Glycerite of Tannic Acid. *new*. Tannic acid 20 gm. (or 2 ounces), glycerin, 80 gm. (or 8 ounces). The tannic acid is to be weighed into a tared (weighed) capsule, the glycerin added, avoiding all contact with with metallic surfaces, and heat applied by water-bath until the acid is completely dissolved. <U. S., p 199. F C F, p 517.

GLYCERITUM AMYLI. Glycerite of Starch. Starch 10 gm. (or 1 ounce), water 10 Cc. (or 1 ounce), glycerin 80 gm. (or 8 ounces). The starch is to be placed in a porcelain capsule, the water added, and mixed with the starch, then the glycerin, mixing the whole well together. Heat is then to be applied and the temperature gradually raised to 140° C. (284° F.), and not exceeding 144° C. (291° F.), stirring constantly until a translucent jelly is formed. <U. S., p 199. F C F, p 518.

In the former revision water was not used, glycerin taking its place, but the addition of water, makes a more uniform preparation; it is evaporated by the heat.

GLYCERITUM BOROGLYCERINI. Glycerite of Boroglycerin. Glycerite of Glyceryl Borate, Solution of Boroglyceride. *new*. Boric acid 310 gm. (or 6.2 ounces), glycerin a sufficient quantity to make 1000 gm. (or 20 ounces). Glycerin 460 gm. (or 9.2 ounces), is to be heated in a tared (weighed) porcelain capsule, to a temperature not exceeding 150° C. (302° F.), and the boric acid added in portions, constantly stirring. When all is added and dissolved the heat is to be continued at the same temperature, frequently stirring, and breaking up the film which forms on the surface. When the mixture has been reduced to the weight of

500 gm., glycerin 500 gm. is to be added and thoroughly mixed with the solution. <U. S., p 200. See also F C F, p 199.

GLYCERINUM HYDRASTIS. Glycerite of Hydrastis. *new.* Hydrastis, in No. 60 powder, 1000 gm. (or 16⅔ ounces av), glycerin 500 Cc. (or 8 fl.ounces), alcohol and water, each a sufficient quantity to make 1000 Cc. (or 16 fl.ounces). The hydrastis is to be moistened with 350 Cc. (or 5 fl.ounces) of alcohol and packed firmly in a cylindrical percolator, enough alcohol is then to be added to cover the drug and leave a stratum above it, and allowed to macerate 48 hours. It is then to be percolated with alcohol until the drug is exhausted. To the percolate 250 Cc. (or 4 fl. ounces) of alcohol is to be added and the alcohol then distilled off leaving a soft extract. Enough water is to be added to this extract to make 500 Cc. (or 8 fl.ounces) and it is to be set aside for 24 hours, then filtered, passing enough water through the filter to make the measure 500 Cc. (or 8 fl.ounces). To this the glycerin is to be added and thoroughly mixed. <U. S., p 200. F C F, p 480.

This is intended to make a preparation similar to the proprietary *Fluid Hydrastis* which has been very popular.

GLYCERITUM VITELLI. Glycerite of Yolk of Egg. Fresh yolk of egg 45 gm. (or 4½ ounces), glycerin 55 gm. (or 5½ ounces). The yolk of egg is to be rubbed in a mortar with the glycerin gradually added until they are thoroughly mixed. <U. S., p 201. F C F, p 519.

For other glycerites <F C F, 517,-522.

GLYCYRRHIZINUM AMMONIATUM. Ammoniated Glycyrrhizin. Glycyrrhiza, in No. 20 powder, 500 gm. (or 16⅔ ounces av), water, ammonia water, and sulphuric acid, of each, a sufficient quantity. Water 475 Cc. (or 7.6 fl.ounces) is mixed with 25 Cc.(or 0.4 fl.ounces) of ammonia water, and the drug moistened. Macerate for 24 hours, then pack in a conical glass percolator, and gradually pour water upon it until 500 Cc. (or 16 fl.ounces) of percolate are obtained. To this add sulphuric acid, slowly, and with constant stirring, so long as a precipitate is produced, collect this on a strainer, wash it with cold water until the washings no longer have an acid reaction, then re-dissolve it in water with the aid of sufficient ammonia water, filter if necessary, add sulphuric acid again so long as a precipitate is produced. Collect, wash again with cold water, dissolve it in just a sufficient quantity of ammonia water diluted with an equal volume of water and spread

the solution upon plates of glass so that when dry, the product may be obtained in scales. <U. S., p 201. F C F, p 523.

This is readily soluble in alcohol or water. When powdered, and added in small quantity to quinine or other bitter alkaloid salts, their bitterness is disguised. A syrup or solution made with this salt, masks the taste of bitter medicines that are held in suspension with it.

GOSSYPIUM PURIFICATUM. Purified Cotton. GOSSYPIUM PHARM. 1880. ABSORBENT COTTON. "The hairs of the seed of *Gossypium herbaceum*, Linné, and of other species of *Gossypium* freed from adhering impurities and deprived of fatty matter." <U. S., p 202. F C F, p 1195.

GUAIACI RESINA. Guaiac. "The resin of the wood of *Guaiacum officinale*, Linné. <U. S., p 203. F C F, p 725.

It is soluble in alcohol, and in solutions of the alkalies.

GUARANA. Guarana. "A dried paste chiefly consisting of the crushed or pounded seeds of *Paullinia Cupana*, Kunth."

It is partly soluble in water and in alcohol. The fluid extract is made with 3 measures of alcohol to 1 measure of water; an elixir is also made.

HYDRARGYRI CHLORIDUM CORROSIVUM. Corrosive Mercuric Chloride. CORROSIVE CHLORIDE OF MERCURY. CORROSIVE SUBLIMATE. $HgCl_2$. <U. S., p 205. F C F, p 526.

This salt is soluble at N T, in 16 parts of water, or in 3 parts of alcohol, or in about 14 parts of glycerin.

HYDRARGYRI CHLORIDUM MITE. Mild Mercurous Chloride. CALOMEL. MILD CHLORIDE OF MERCURY. Hg_2Cl_2. "Obtained in the form of powder by the rapid condensation of the vapor of mercurous chloride." <U. S., p 206. F C F, p 525.

Calomel is insoluble in water, alcohol, ether, and other ordinary media.

HYDRARGYRI CYANIDUM. Mercuric Cyanide. $Hg(CN)_2$. <U. S., p 206. F C F, p 526.

Soluble at N T, in 12.8 parts of water, and in 15 parts of alcohol.

HYDRARGYRI IODIDUM FLAVUM. Yellow Mercurous Iodide. HYDRARGYRI IODIDUM VIRIDE, PHARM. 1880. PROTOIODIDE OF MERCURY. GREEN IODIDE OF MERCURY. Hg_2I_2. The formula and manipulation of this preparation are entirely changed from the former revision. Mercury 50 gm. (or 5 ounces) with nitric acid, potassium iodide, distilled water, and alcohol, each a sufficient quantity are taken. Nitrate of mercury is first formed by dissolving the mercury (mostly) in 20 Cc. (or 2 fl.ounces), each of nitric acid and distilled water, separating the crystals of mercurous nitrate which forms, from the mother liquid, draining them first in a glass funnel and then on bibulous paper, in a dark place

until dry. 40 gm. (or 4 ounces) of the dry salt is then weighed, and dissolved in 1000 Cc. (or 100 ounces) of distilled water to which 10 Cc. (or 1 fl.ounce) of nitric acid had previously been added. 24 gm. (or 2.4 ounces) of potassium iodide is then dissolved in 1000 Cc. (or 100 ounces) of distilled water and this solution slowly poured into the solution of mercurous chloride, stirring constantly. The precipitate which forms is then transferred to a filter and washed with distilled water until it has no acid reaction, and afterwards with alcohol so long as the washings give any color with hydrogen sulphide test-solution. The precipitate is then dried in a dark place between sheets of bibulous paper at a temperature not exceeding 40° C. (104° F.). <U. S., p 208. F C F, p 527.

Note the change of title, which was, in the former revision, Hydrargyri Iodidum Viride—Green Iodide of Mercury. It is almost insoluble in water, and insoluble in alcohol or ether.

HYDRARGYRI IODIDUM RUBRUM. Red Mercuric Iodide. Biniodide of Mercury. Red Iodide of Mercury. HgI_2 Corrosive mercuric chloride 40 gm. (or 4 ounces), potassium iodide 50 gm. (or 5 ounces), distilled water a sufficient quantity. The corrosive mercuric chloride and the potassium iodide are each to be dissolved separately in 800 Cc. (or 80 ounces) of distilled water and the solutions poured, simultaneously, and in a thin stream, with constant, active stirring, into 2000 Cc. (or 200 ounces) of distilled water. The precipitate which subsides after standing is to be collected on a filter and washed with cold distilled water until the washings show but slight opalescence with silver nitrate test-solution. It is then to be dried in a dark place, between sheets of bibulous paper at a temperature not exceeding 40° C. (104° F.). <U. S., p 208. F C F, p 527.

The manipulation is somewhat changed in the present formula, but the resultant preparation is the same. It is almost insoluble in water, but dissolves in 130 parts of alcohol at N T.

HYDRARGYRI OXIDUM FLAVUM. Yellow Mercuric Oxide. HgO. Corrosive mercuric chloride 100 gm. (or 10 ounces), soda 40 gm. (or 4 ounces), distilled water a sufficient quantity. The corrosive mercuric chloride is to be dissolved in 1000 Cc. (or 100 ounces) of warm distilled water and the solution filtered. The soda (which should contain 90 per cent. of sodium hydrate) is to be dissolved in 1000 Cc. (or 100 ounces) of cold distilled water. Into this solution the first solution is to be poured gradually, and

with constant stirring and the mixture allowed to stand for an hour at a temperature of about 30° C. (86° F.), stirring frequently. The clear liquid is then to be poured off from the precipitate, and the latter repeatedly washed with fresh portions of water until free from sodium chloride, the precipitate is then drained and dried between sheets of bibulous paper, in a dark place, at a temperature not exceeding 30° C. (86° F.). <U. S., p 209. F C F, p 528.

Almost insoluble in water, insoluble in alcohol; but soluble in dilute nitric or hydrochloric acid.

HYDRARGYRI OXIDUM RUBRUM. Red Mercuric Oxide. Red Precipitate. HgO. <U. S., p 210. F C F, p 529.

Almost insoluble in water, insoluble in alcohol; but readily and completely soluble in diluted hydrochloric or nitric acids.

HYDRARGYRI SUBSULPHAS FLAVUS. Yellow Mercuric Subsulphate. Basic Mercuric Sulphate. Turpeth Mineral. $Hg(HgO)_2SO_4$. Mercury 100 gm. (or 10½ ounces), sulphuric acid 30 Cc. (or 3 fl.ounces), nitric acid 25 Cc. (or 2½ fl.ounces), distilled water a sufficient quantity. Put the mercury in a capacious flask and add to it the sulphuric acid previously mixed with 15 Cc. (or 1½ fl.ounces) of distilled water, then add, very gradually, the nitric acid previously mixed with 25 Cc. (or 2½ fl.ounces) of distilled water, and digest the mixture at a gentle heat until reddish fumes are no longer given off. Then transfer the mixture to a porcelain capsule and heat on a sand-bath, under a hood or in the open air, with frequent stirring, until a dry white mass remains. Reduce this to a fine powder and add it in small portions at a time, with constant stirring, to 2000 Cc. (or 200 fl.ounces) of boiling distilled water. When it has all been added continue the boiling for 10 minutes, then allow the mixture to settle, decant the supernatent liquid, pour the precipitate on a strainer and wash it with warm distilled water until the washings no longer have an acid reaction, and dry it in a moderately warm place. <U. S., p 211. F C F, p 530.

It is soluble in about 2000 parts of water at N T, and in 600 parts of boiling water; insoluble in alcohol; but readily soluble in dilute solutions of nitric and hydrochloric acid.

HYDRARGYRI SULPHIDUM RUBRUM. Red Sulphate of Mercury. HgS. This salt which was official in the 1880 Pharm is now dismissed.

HYDRARGYRUM. Mercury. Quicksilver. Hg.

Liquid at ordinary temperature, but solidifies at —39.38°C. (—38.88°F.), sp. gr.

13.558 at N T. It is insoluble in ordinary media; boils and volatilizes at 357.25°C. (675.05°F.). <U. S., p 211. F C F, p 523.

HYDRARGYRUM AMMONIATUM. Ammoniated Mercury. Mercuric Ammonium Chloride. White Precipitate. NH_2H_9Cl Corrosive mercuric chloride, in powder, 100 gm. (or 1 ounce), ammonia water and distilled water, of each, a sufficient quantity. The corrosive mercuric chloride is to be dissolved in 2000 Cc. (or 20 ounces) of warm distilled water and the solution filtered. When cool the filtered liquid is to be poured gradually and with constant stirring into 150 Cc. (or 1½ ounces) of ammonia water, taking care that the latter shall remain in slight excess. The precipitate which forms is to be collected on a filter and washed with a mixture of 400 Cc. (or 4 ounces) of distilled water, with 20 Cc. (or 2 fl.drachms) of ammonia water, and finally dried between sheets of bibulous paper in a dark place at a temperature not exceeding 30° C. (86° F.). <U. S., p 212. F C F, p 524.

This salt is almost insoluble in alcohol or water, but is decomposed by acids, and by some alkali solutions.

HYDRARGYRUM CUM CRETA. Mercury With Chalk. Mercury 38 gm. (or 1 ounce av. + 148 grains), clarified honey 10 gm. (or 2 ounces av. + 65 grains), water a sufficient quantity. The mercury and honey are to be weighed into a strong bottle of 100 Cc. (or 4 ounces) capacity and 2 Cc. (or half-a-fluid-drachm) of water added. The bottle is to be firmly corked and shaken for about half an hour at a time, until it has had 10 hours shaking, or until the globules of mercury are no longer visible under a lens magnifying 4 diameters. The prepared chalk is to be rubbed in a mortar with water to a creamy paste and the contents of the bottle added, washing out the bottle with a little water and adding, and triturating the contents of the mortar to a uniform mixture. The mixture is then to be dried, first by putting between folds of bibulous paper and then in a capsule, to 100 gm. (or 3 ounces av. + 231 grains = nearly 3½ ounces av.). It is then to be reduced to a uniform powder without trituration. <U. S., p 213. F C F, p 524.

The formula and manipulation of the present revision are entirely different than heretofore, but the proportions of mercury and chalk are the same.

HYDRASTININÆ HYDROCHLORAS. Hydrastinine Hydrochlorate. $C_{11}H_{11}NO_2HCl$. *new.* "The hydrochlorate of an artificial alkaloid derived from hydrastine, the latter being a colorless alkaloid obtained from Hydrastis." <U. S., p 213.

This salt is described as "light-yellow, amorphous granules, or a pale-yellow, crystalline powder, odorless, and having a bitter, saline taste; deliquescent on exposure to damp air. Soluble at N T, in 0.3 part of water and in 3 parts of alcohol." It is employed in the treatment of hæmorrhage, especially of the uterus and its appendages. It is administered, preferably, by hypodermic injection, or in doses of 0.05 gm. (0.77 grain) three times a day.

This preparation must not be mistaken for the hydrochlorate of berberine, which is sometimes called hydrochlorate of hydrastine.

HYOSCINÆ HYDROBROMAS. Hyoscine Hydrobromate. $C_{17}H_{21}NO_4HBr+3H_2O$. *new.* "The hydrobromate of an alkaloid obtained from Hyoscyamus." <U. S., p 214. See F C F, p 118.

This is soluble at N T, in 1.9 parts of water, and in 13 parts of alcohol. It is used in the treatment of epilepsy, inebriety, etc., chiefly by hypodermic injection in doses of $\frac{1}{100}$ to $\frac{1}{60}$ grain.

HYOSCYAMINÆ HYDROBROMAS. Hyoscyamine Hydrobromate. $C_{17}H_{23}NO_3HBr$. *new.* "The hydrobromate of an alkaloid obtained from hyoscyamus." <U. S., p 215. See F C F, p 118.

Soluble at N T, in 0.3 part of water, and in two parts of alcohol. The uses of this salt are similar to those of hyoscine hydrobromate, the dose being from $\frac{1}{60}$ to $\frac{1}{40}$ grain, either hypodermically or internally.

HYOSCYAMINÆ SULPHAS. Hyoscyamine Sulphate. $(C_{17}H_{23}NO_3)_2H_2SO_4$. "The neutral sulphate of an alkaloid obtained from Hyoscyamus." <U. S., p 215. F C F, p 118.

Soluble at N T, in 0.5 part of water, and in 2.5 parts of alcohol. Its uses and doses are similar to the foregoing.

INFUSA. Infusions. The general formula for infusions in the seventh revision is, the substance coarsely comminuted 50 gm. (or 1 ounce), boiling water 1000 Cc. (or 20 ounces), water a sufficient quantity to make 1000 Cc. (or 20 ounces). The substance is to be put in a suitable vessel provided with a cover, the boiling water poured upon it, the vessel covered tightly and allowed to stand for half an hour. The liquid is then to be strained and enough water passed through the strainer to make the measure 1000 Cc. (or 20 ounces). <U. S., p 216. F C F, p 533.

It will be noted that the strength of infusions as made by the general formula is only one-half as much as before, viz.: 5 per cent. of the substance instead of 10 per cent. Infusum Brayeræ has been dismissed.

INFUSUM CINCHONÆ. Infusion of Cinchona. The present formula remains the same as in the former revision except the substitution of metric weight and measure for parts. Cinchona in No. 40 powder 60 gm. (or 1 ounce av), aromatic sulphuric acid 10 Cc. (or 75 minims), water a sufficient quantity to make 1000 Cc.

(or 16 fl.ounces). The acid is to be mixed with 500 Cc. of water and the cinchona percolated in a conical percolator, first with this and then with water until 1000 Cc. (or 16 fl.ounces) have passed. <U. S., p 217. F C F, p 535.

INFUSUM DIGITALIS. Infusion of Digitalis. The present formula is changed by the use of cinnamon water instead of cinnamon in powder. Digitalis in No. 20 powder 15 gm. (or 200 grains), alcohol 100 Cc. (or 3 fl.ounces), cinnamon water 150 Cc. (or 4½ fl.ounces), boiling water 500 Cc. (or 15 fl.ounces), cold water a sufficient quantity to make 1000 Cc. (or 30 fl.ounces). The boiling water is to be poured upon the digitalis contained in a suitable vessel and allowed to macerate until cold. It is then to be strained, the alcohol and cinnamon water added and enough cold water poured through the strainer to make the measure 1000 Cc. (or 30 fl.ounces).

INFUSUM PRUNI VIRGINIANÆ. Infusion of Wild Cherry. This is the same as before: Wild cherry, in No. 20 powder, 40 gm. (or 1 ounce), water, a sufficient quantity to make 1000 Cc. (or 25 ounces). The wild cherry is to be moistened with 60 Cc. (or 1½ ounces) of water and allowed to macerate for one hour. It is then to be packed firmly in a conical glass percolator, and water (cold) poured upon it until the infusion measures 1000 Cc. (or 25 ounces). <U. S., p 218. F C F, p 535.

INFUSUM SENNÆ COMPOSITUM. Compound Infusion of Senna. Black Draught. The formula for this remains unchanged, except the substitution of metric weight and measure for parts. Senna, 60 gm. (or 1 ounce), manna, 120 gm. (or 2 ounces), magnesium sulphate, 120 gm. (or 2 ounces), Fennel, bruised, 20 gm. (or 146 grains), boiling water, 800 Cc. (or 13 ounces), cold water, a sufficient quantity to make 1000 Cc. (or 16 fl.ounces). The boiling water is to be poured upon the senna in a suitable vessel, and allowed to macerate until cold. The infusion is then to be strained, with expression, the magnesium sulphate and manna are to be dissolved in the liquid and the solution again strained, adding through the strainer enough cold water to make 1000 Cc. (or 16 fl.ounces). <U. S., p 218. F C F, p 536.

For other infusions see F C F, p 533 to 539. It may be here remarked that a great share of the infusions required in the retail trade, are made extemporaneously by adding cold water to the required quantity of fluid extract of the drug and filtering if necessary. The present Pharm. infusions are 5 per cent. strength, therefore 1 ounce of the fl.extract to 19 fl.ounces of water would be the proportion.

IODOFORMUM. Iodoform. CHI_3. The sp. gr. of Iodoform is 2.000 at N T. It is very sparingly soluble in water, and requires 52 parts of alcohol, or 5.2 parts of ether to effect its solution. It is very soluble in chloroform, benzin and oils. <U. S., p 218. F C F, p 539.

IODUM. Iodine. I.

The sp. gr. of Iodine is 4.984 at 17°C. (65°F.). It is soluble in about 5000 parts of water, and in 10 parts of alcohol at N T. It dissolves readily in a solution of iodide of potassium, also in ether, chloroform or carbon disulphide. It volatilizes slowly at ordinary temperature giving forth a purple vapor.

KINO. Kino. "The inspisssated juice of *Pterocarpus Marsupium.*" U. S., p 221. F C F, p 727.

Kino is soluble in alcohol, nearly insoluble in ether and almost insoluble in cold water.

LACTUCARIUM. Lactucarium. "The concrete milk-juice of *Lactuca Virosa.*" <U. S., p 222.

It is partly soluble in alcohol and ether; and with water, when triturated, it yields a turbid mixture.

LIMONIS SUCCUS. Lemon Juice. "The freshly expressed juice of the ripe fruit of *Citrus Limonum.* <U. S., p 223.

Lemon juice contains about 7 per cent. of citric acid. Its sp. gr. at N T, is not less than 1.030.

LINIMENTA. Liniments. In the liniments of the new Pharm. *Linimentum Saponis Mollis* now takes the place of *Tinctura Saponis Viridis*, of the 1880 Pharm. Two have been dismissed, viz: *Liuimentum Cantharidis* and *Linimentum Plumbi Subacetatis.* Several changes in the remaining preparations have been made, which will be noted under the formulas in which they occur. For other liniments <F C F, p 543 to 546.

LINIMENTUM AMMONIÆ. Ammonia Liniment. VOLATILE LINIMENT. The present formula is changed by the addition of alcohol; the proportion of ammonia water is also increased. Ammonia water, 350 Cc. (or 7 ounces), alcohol, 50 Cc. (or 1 ounce), cotton seed oil, 600 Cc. (or 12 ounces). Shake them well together in a bottle. Should be freshly made when wanted for use. If drachms are substituted for ounces in the above, the product is 2½ ounces. <U. S., p 223. F C F, b 543.

LINIMENTUM BELLADONNÆ. Belladonna Liniment. There is no change in this preparation, except the substitution of metric weight and measure for parts. Camphor, 50 gm. (or ½ ounce), fluid extract of belladonna, a sufficient quantity to make 1000 Cc. (or 10 ounces). The camphor is to be dissolved in the fluid extract, 200 Cc. (or 2 ounces), and enough of the fluid extract added to make 1000 Cc. (or 10 ounces). <U. S., p 228. F C F, p 543.

LINIMENTUM CALCIS. Lime Liniment. CARRON OIL. This remains the same. Solution of lime and cotton seed oil, equal volumes, are to be mixed and shaken well together. <U. S., p 224. F C F, p 544.

LINIMENTUM CAMPHORÆ. Camphor Liniment. This preparation which is more commonly known as *Camphorated Oil* remains unchanged. Camphor, 200 gm. (or 2 ounces), cotton seed oil, 800 gm. (or 8 ounces). The camphor, in small pieces, is to be dissolved in the oil by the aid of heat of a water-bath. <U. S., p 224. F C F, p 544.

LINIMENTUM CHLOROFORMI. Chloroform Liniment. The change to metric measure makes an apparent, but only a slight real change in the present formnla. Chloroform, 300 Cc. (or 3 fl. ounces), soap liniment, 700 Cc. (or 7 fl.ounces). They are to be well mixed together. U. S., p 224. F C F, p 544.

LINIMENTUM SAPONIS. Soap Liniment. In the present Pharm. the proportion of soap has been decreased, and of camphor increased. Soap, in fine powder, 70 gm. (or 1¾ ounces av), camphor, in small pieces, 45 gm. (or 1⅛ ounces av.), oil of rosemary, 10 Cc. (or 70 minims), alcohol, 750 Cc. (or 18 fl.ounces), water, a sufficient quantity to make 1000 Cc. (or 24 fl.ounces). The camphor is to be dissolved in the alcohol, the soap and oil added and the whole shaken well together, and then enough water added to make 1000 Cc. (or 24 fl.ounces), and the mixture allowed to stand, with occassional agitation until it becomes clear. It is then to be set aside for 24 hours and filtered. U. S., p 224. F C F, p 545.

LINIMENTUM SAPONIS MOLLIS. Liniment of Soft Soap. TINCTURE SAPONIS VIRIDIS, PHARM. 1880. The change of title in this preparation will be noted. The formula is also slightly changed. Soft soap, 650 gm. (or 6 ounces av. + 6 drachms), oil of lavender, 20 Cc. (or 90 minims), alcohol, 300 Cc. (or 3 fl.ounces), water, a sufficient quantity to make 1000 Cc. (or 10 fl.ounces). The alcohol and oil are to be mixed, and the soft soap dissolved in the mixture by stirring or agitation. The solution is to be set aside for 24 hours, then filtered and enough water passed through the filter to make the measure 1000 Cc. (or 10 fl.ounces). <U. S., p 225. F C F, p 938.

LINIMENTUM SINAPIS COMPOSITUM. Compound Liniment of Mustard. In this preparation fluid extract of mezereum

is substituted for the solid extract. Volatile oil of mustard 30 Cc. (or 130 minims), fluid extract of mezereum 200 Cc. (or 2 fl.ounces) camphor 60 gm. (or 273 grains), castor oil 150 Cc. (or 1½ fl. ounces), alcohol a sufficient quantity to make 1000 (or 10 fl. ounces). The camphor is to be dissolved in 500 Cc. (or 5 fl. ounces) of alcohol and the fluid extract added, then the oil of mustard and the castor oil and enough alcohol to make the measure 1000 gm. (or 10 fl.ounces). <U. S., p 225. F C F, p 545.

LINIMENTUM TEREBINTHINÆ. Turpentine Liniment. The only change in this preparation is the substitution of metric weight for parts. Resin cerate 650 gm. (or 6½ ounces), oil of turpentine 350 gm. (or 3½ ounces). The resin cerate is to be melted on a water-bath and the oil of turpentine added and thoroughly mixed. <U. S., p 225. F C F, p 546.

LIQUORS. Solutions. In the liquors or solutions of the new Pharm. no additions have been made except by the transfer of Basham's Mixture from the mixtures. Three solutions have been dismissed, viz: *Solution of Citrate of Iron and Quinine*, *Solution of Gutta-Percha* and *Solution of Pepsin*. In the remaining preparations but few important changes have been made, except such as were necessary to conform to the new standard of strength of some of the ingredients. For other solutions, of which there are many. <F C F, p 547 to 592.

LIQUOR ACIDI ARSENOSI. Solution of Arsenous Acid. Arsenous acid 10 gm. (or 91¼ grains), diluted hydrochloric acid 50 Cc. (or 1 fl.ounce), distilled water a sufficient quantity to make 1000 gm. (or 20 fl.ounces. The diluted hydrochloric acid is to be mixed with 250 Cc. (or 2½ ounces) of distilled water, the arsenous acid added and the mixture boiled until all the arsen us acid is dissolved. The solution is then to be filtered and enough distilled water added to make the measure 1000 Cc. (or 20 fl.ounces). <U. S., p 226. F C F, p 547.

The change in the spelling in both the Latin and English title will be noted. The solution contains 1 per cent. of arsenous acid.

LIQUOR AMMONII ACETATIS. Solution of Ammonium Acetate. SPIRIT OF MINDERERUS. "An aqueous solution of ammonium acetate, $NH_4C_2H_3O_2$, containing about 7 per cent. of the salt, together with a small amount of acetic and carbonic acids." <U. S., p 226. F C F, p 548.

The present Pharm. directs ammonium carbonate 5 gm. (or ½ ounce) to be gradually added to diluted acetic acid 100 Cc. (or 10 ounces). The ammonium carbonate dissolves with evolution of CO_2. It should be freshly prepared when wanted for use.

LIQUOR ARSENI ET HYDRARGYRI IODIDI. Solution of Arsenic and Mercuric Iodide. DONOVAN'S SOLUTION. Arsenic iodide 10 gm. (or 91¼ grains), red mercuric iodide 10 gm (or 91¼ grains), distilled water a sufficient quantity to make 1000 gm. (or 20 fl.ounces). The arsenic iodide is to be powdered and mixed with the red mercuric iodide; distilled water 150 Cc. (or 3 fl. ounces) is then to be added and triturated until the salts are dissolved; the solution is then to be filtered and enough water passed through the filter to make 1000 Cc. (or 20 fl.ounces). <U. S., p 227. F C F, p 550.

This preparation contains 1 per cent. each of the iodides.

LIQUOR CALCIS. Solution of Lime. SOLUTION OF CALCIUM HYDRATE, LIME WATER. "A saturated solution of calcium hydrate, $Ca(OH)_2$. The percentage of calcium hydrate varies with the temperature, being somewhat over 0.17 per cent. at N T, and diminishing as the temperature rises." <U. S., 227. F C F, 552.

The present Pharm. directs lime 12 gm. (or ½ ounce), with distilled water a sufficient quantity. The lime is slaked by pouring upon it gradually 70 Cc. (or 3 ounces) of distilled water, then 360 Cc. (or 22 ounces) of distilled water are added and the mixture agitated occasionally during half an hour. It is then allowed to settle, the clear portion being thrown away, and to the residue 3600 Cc. (or 13½ pints) of distilled water are added, and thoroughly mixed. The clear liquid is poured off when wanted for use.

LIQUOR FERRI ACETATIS. Solution of Ferric Acetate. "An aqueous solution of ferric acetate $Fe_2(C_2H_3O_2)_6$, containing about 31 per cent. of the anhydrous salt, and corresponding to about 7.5 per cent. of metallic iron. <U. S., p 228. F C F, p 553

Solution of ferric acetate 1000 gm. (or 10 ounces av), glacial acetic acid 260 gm. (or 2.6 ounces av), ammonia water 850 Cc. (or 8½ fl.ounces), water and distilled water, of each, a sufficient quantity to make 1000 gm. (or 10 ounces av). The ammonia water is to be mixed with 3000 Cc. (or 30 ounces) of cold water, and the solution of ferric sulphate with 10000 Cc. (or 100 ounces) of cold water, the iron solution is to be added slowly, and with constant stirring, to the ammonia solution and the precipitate which forms allowed to subside. The clear liquid is then to be poured off and the precipitate washed with successive portions of 6000 Cc. (or 60 ounces) each of boiling water until all soluble salts are removed. The precipitate is then to be drained and pressed on a muslin

strainer until its weight is reduced to less than 700 gm. (or 7 ounces), and this is to be added gradually to the acetic acid until it is all dissolved and then enough distilled water added to make the weight 1000 gm. (or 10 ounces av.). <U. S., p 228. F C F, p 553.

This solution should have a sp. gr. of about 1.160 at N T.

LIQUOR FERRI CHLORIDI. Solution of Ferric Chloride. "An aqueous solution of ferric chloride, Fe_2Cl_6, containing about 37.8 per cent. of the anhydrous salt, corresponding to 62.9 per cent. of the crystallized salt, $Fe_2Cl_6+12H_2O$, or to about 13 per cent. of metallic iron." <U. S., p 229. F C F, p 554.

Iron, in the form of fine wire, and cut into small pieces, 150 gm. (or 3 ounces), hydrochloric acid 870 gm. (or 17.4 ounces), nitric acid, distilled water, each, a sufficient quantity to make 1000 gm. (or 20 ounces). The iron wire is put into a flask of about 2000 Cc. (or 40 fl.ounces) capacity, and a mixture of 540 gm. (or 10.8 ounces) of hydrochloric acid with 250 Cc. (or 5 ounces) of distilled water poured upon it and allowed to set in a moderately warm place until effervescence ceases. It is then heated to the boiling point and filtered, rinsing the flask and the iron wire with a little hot distilled water and adding through the filter. To the filtered liquid, hydrochloric acid, 280 gm. (or 5.6 ounces) is added, and then this mixture is added slowly and gradually in a stream to 80 gm. (or 1.6 ounces) of nitric acid contained in a capacious porcelain vessel and heated gently until effervescence ceases. Heat by means of a sand-bath is then applied until the liquid is free from nitrous odor, a little more nitric acid is then added, drop by drop until it no longer effervesces and the excess is evaporated off as before. The remaining 50 gm. (or 1 ounce) of hydrochloric acid is then added and enough distilled water to make of the solution 1000 gm. (or 20 ounces). <U. S., p 239. F C F, p 554.

This solution is used for making tincture of ferric chloride, and other preparations. Its sp. gr. is 1,387 at N T.

LIQUOR FERRI CITRATIS. Solution of Ferric Citrate. "An aqueous solution of ferric citrate corresponding to about 7.5 per cent. of metallic iron." <U. S., p 231. F C F, p 555.

Solution of ferric sulphate, 1050 gm. (or 10½ ounces av.), citric acid, 300 gm. (or 3 ounces av.), ammonia water, 880 Cc. (or 8¾ fl. ounces), water, a sufficient quaniity to make 1000 gm. (or 10 ounces av.).

The ammonia water is to be mixed with 3000 Cc. (or 30 ounces) of cold water and the solution of ferric sulphate with 10000 Cc. (or 100 ounces) of cold water. The solutions are to be mixed and the precipitate washed and drained as directed in the formula for solution ferric acetate (antè). It is then to be transferred to a capsule, the citric acid added and the mixture heated on a water-bath to 60° C. (140° F.), stirring constantly until dissolved. The solution is then to be filtered and evaporated at the above mentioned temperature until it weighs 1000 Cc. (or 10 ounces).

The sp. gr. of this solution is 1.250 at N T.

LIQUOR FERRI ET AMMONII ACETATIS. Solution of Iron and Ammonium Acetate. MISTURA FERRI ET AMMONII ACETATIS, PHARM. 1880. BASHAM'S MIXTURE. Tincture of ferric chloride 20 Cc. (or 1 fl.drachm), diluted acetic acid 30 Cc. (or 1½ fl.drachms), solution of ammonium acetate 200 Cc. (or 1¼ fl. ounces), aromatic elixir 100 Cc. (or ½ fl.ounce), glycerin 120 Cc (or ⅝ fl.ounce), water a sufficient quantity to make 1000 Cc. (or 5 fl.ounces). To the solution of ammonium acetate (which should not be alkaline) the diluted acetic acid, the tincture of ferric chloride, the aromatic elixir and the glycerin are successively to be added, and lastly, enough water to make the measure 1000 Cc. (or 5 fl.ounces). This preparation should be freshly made when wanted for use, hence the small quantities directed. <U. S., p 232. F C F, p 624.

It will be noted that this preparation takes the place of *Mistura Ferri et Ammonii acetatis*, of the former Pharm., glycerin being substituted in place of syrup.

LIQUOR FERRI NITRATIS. Solution of Ferric Nitrate. "An aqueous solution of ferric nitrate, $Fe_2(NO_3)_6$, containing about 6.2 per cent. of the anhydrous salt, and corresponding to about 1.4 per cent. of metallic iron." <U. S., p 232. F C F, p 556.

Solution of ferric sulphate 180 gm. (or 4½ ounces), ammonia water 160 Cc. (or 4 ounces), nitric acid 71 gm. (or 1¾ ounces + 15 grains), distilled water and water each a sufficient quantity to make 1000 gm. (or 25 ounces). The ammonia water is to be mixed with 500 Cc. (or 12 fl.ounces) of cold water, and the solution of ferric sulphate with 1500 Cc. (or 36 fl.ounces) of cold water and the latter solution slowly added to the former with constant stirring. When the precipitate has subsided the clear liquid is to be poured off and the precipitate washed with several portions of 1000 Cc. (or 24 fl.ounces) of water until all the soluble salts are removed. The ferric hydrate which remains as a precipitate is

then poured on a wet muslin strainer and drained thoroughly, then it is to be transferred to a porcelain capsule and the nitric acid added and stirred with a glass rod until dissolved. and finally enough distilled water is added to make the finished product weigh 1000 gm. (or 25 ounces) and filtered if necessary.

The sp. gr. of this solution is about 1.050 at N T.

LIQUOR FERRI SUBSULPHATIS. Solution of Ferric Subsulphate. SOLUTION OF BASIC FERRIC SULPHATE. MONSEL'S SOLUTION. "An aqueous solution of basic ferric sulphate (of variable chemical composition), corresponding to about 13.6 per cent. of metallic iron." <U. S., p 233. F C F, p 557.

Ferrous sulphate in clear crystals 675 gm. (or 13½ ounces), sulphuric acid 65 gm. (or 1.3 ounces), nitric acid and distilled water, each, a sufficient quantity to make 1000 gm. (or 20 ounces). The sulphuric acid is to be added to 500 Cc. (or 10 ounces) of distilled water in a capacious porcelain capsule, and the mixture heated by water-bath to nearly 100° C. (212° F.), and then 65 gm. (or 1.3 ounces) of nitric acid added and well mixed with a glass rod. The ferrous sulphate, reduced to a coarse powder, is then to be added in four equal portions, one at a time, stirring after each addition until dissolved and effervescence ceases. When all is dissolved nitric acid is to be added, a few drops at a time, until red fumes no longer rise when it is added. The solution is then to be boiled until it acquires a ruby red color and is free from nitrous odor, and lastly, enough distilled water is to be added to make the weight 1000 gm. (or 20 ounces). The product should be kept in well-stopped bottles, in a moderately warm place not under 22° C (71.6° F.), protected from light.

The sp. gr. of this solution is about 1.550 at N T. This is also known as *Solution Persulphate of Iron.*

LIQUOR FERRI TERSULPHATIS. Solution of Ferric Sulphate. "An aqueous solution of normal ferric sulphate, $Fe_2(SO_4)_3$, containing about 28.7 per cent. of the salt and corresponding to about 8 per cent. of metallic iron." <U. S., p 235. F C F, p 558.

Ferrous sulphate in clear crystals 400 gm. (or 8 ounces), sulphuric acid 78 gm. (or 1½ ounces), nitric acid and distilled water, of each, a sufficient quantity to make 1000 gm. (or 20 ounces). The sulphuric acid is to be added to 500 Cc. (or 10 ounces) of distilled water, in a capacious porcelain capsule and the mixture heated to nearly 100° C. (212° F.). Nitric acid 55 gm. (or 1⅛ ounces) is then to be added and well mixed, and the ferrous sul-

phate, coarsely powdered and divided into four portions, is then to be added to the mixture, a portion at a time, stirring with a glass rod after the addition of each portion until effervescence ceases. After the iron salt is all dissolved, nitric acid a few drops at a time is to be added until red fumes no longer are evolved, and the solution is then to be boiled until it becomes of a reddish-brown color and is free from nitrous odor, and finally enough distilled water is to be added to make the weight 1000 gm. (or 20 ounces), and filtered if necessary.

The sp. gr. of this solution is about 1.320 at N T. In the former Pharm. this preparation had the English titles, *Solution of Tersulphate of Iron* and *Solution of Normal Ferric Sulphate.*

LIQUOR HYDRARGYRI NITRATIS. Solution of Mercuric Nitrate. "A liquid containing about 60 per cent. of mercuric nitrate, $Hg(NO_3)_2$, together with about 11 per cent. of free nitric acid." <U. S., p 236. F C F, p 558.

In the present formula the proportion of the mercuric salt has been reduced one-third. Red mercuric oxide 40 gm. (or 4 ounces) nitric acid 45 gm. (or 4½ ounces), distilled water 15 gm. (or 1½ ounces). The nitric acid is to be mixed with the distilled water, and the red mercuric oxide dissolved in the mixture.

The sp. gr. of this salt is about 2.100 at N T.

LIQUOR IODI COMPOSITUS. Compound Solution of Iodine. LUGOL'S SOLUTION. This is the same as before. Iodine 5 gm. (or 1 ounce), potassum iodide 10 gm. (or 2 ounces), distilled water a sufficient quantity to make 100 gm. (or 10 ounces). The iodine and iodide of potassium are to be dissolved in sufficient distilled water to make the weight 100 gm. (or 10 ounces). <U. S., p 236. F C F, p 559.

LIQUOR MAGNESII CITRATIS. Solution of Magnesium Citrate. The formula is for one bottle.

Magnesium carbonate, 15 gm. (or 230 grains.
Citric acid, 30 gm. (or 460 grains).
Syrup of citric acid, 120 Cc. (or 4 fl.ounces).
Potassium bicarbonate, 2½ gm. (or 38 grains).
Water, a sufficient quantity,

The citric acid is to be dissolved in 120 Cc. (or 4 fl.ounces) of water, and the magnesium carbonate, (made fine by rubbing through a sieve). added and the mixture stirred until the magnesium carbonate is dissolved. The solution is then to be filtered into a strong bottle of the capacity of about 360 Cc. (or 12 fl.

ounces) containing the syrup of citric acid, water is then to be added to nearly fill the bottle, and the potassium bicarbonate (in crystals) dropped in, and the bottle immediately corked and the cork secured with twine. It is then to be agitated occasionally until the potassium bicarbonate is dissolved. <U. S., p 237. F C F, p 561.

It will be noted that the present formula increases the quantity of all the medicinal ingredients, materially, the 1880 formula being carbonate of magnesium. 13 gm.; citric acid, 26 gm.; syrup of citric acid, 80 gm.; bicarbonate of potassium, 2 gm.; to make the same quantity as is now directed. The syrup of citric acid is doubled in quantity, and really seems excessive.

LIQUOR PLUMBI SUBACETATIS. Solution of Lead Subacetate. GOULARD'S EXTRACT. "An aqueous liquid containing in solution about 25 per cent. of lead subacetate, approximately $Pb_2O(C_2H_3O_2)_2$" <U. S., p 237. F C F, p 563.

The proportion of lead oxide is reduced in the present formula to 100 parts instead of 120 parts as formerly. Lead acetate 170 gm. (or 4¼ ounces), lead oxide 100 gm. (or 2½ ounces), distilled water a sufficient quantity to make 1000 gm. (or 25 ounces). The lead acetate is to be dissolved in 800 gm. (or 20 ounces) of boiling water in a glass or porcelain vessel and the lead oxide, previously passed through a fine sieve, added and the mixture boiled for half an hour, adding hot distilled water occasionally to make up for loss by evaporation. The heat is then removed, the solution cooled, and enough distilled water previously boiled is to be added to make the weight 1000 gm. (or 25 ounces). It is then to be filtered with as little exposure to the air as possible.

The sp. gr. of this preparation at N T, is about 1.195.

LIQUOR PLUMBI SUBACETATIS DILUTUS. Diluted Solution of Lead Subacetate. LEAD WATER. Solution of lead subacetate 30 Cc. (or 3 fl.ounces), distilled water a sufficient quantity to make 1000 Cc. (or 10 fl.ounces). The lead solution is to be mixed with sufficient distilled water, previously boiled and cooled to make 1000 Cc. (or 10 fl.ounces). <U. S., p 238. F C F, p 564.

LIQUOR POTASSÆ. Solution of Potassa. SOLUTION OF POTASSIUM HYDRATE. "An aqueous solution of potassium hydrate, KOH, containing about 5 per cent. of the hydrate." <U. S., p 238. F C F, p 564.

Potassium bicarbonate 85 gm. (or 2⅛ ounces), lime 40 gm. (or 1 ounce), distilled water, a sufficient quantity. The potassium carbonate is to be dissolved in 400 Cc. (or 10 ounces) of distilled

water and the solution heated until effervescence ceases. The heat is then to be increased to the boiling point of the liquid. The lime which has previously been slaked and mixed with 400 Cc. (or 10 ounces) of distilled water is to be poured into a tared (weighed) flask, heated to boiling, and the hot solution of potassium bicarbonate gradually added to it and the whole allowed to boil for 10 minutes. Then enough distilled water is added to make the contents of the flask weigh 1000 Cc. (or 25 ounces) and when cool it is to be strained through linen. Most druggists prepare liquor potassa by dissolving 56 gm. (or 1 ounce av.) of potassa (caustic potash) in distilled water 944 gm. (or 16 fl.ounces).

The sp. gr. of this solution is about 1.036 at N. T.

LIQUOR POTASSII ARSENITIS. Solution of Potassium Arsenite. FOWLER'S SOLUTION. The present Pharm. doubles the proportion of potassium bicarbonate, which, no doubt, adds to the stability of the preparation. Arsenous acid, in fine powder, 10 gm. (or 154.3 grains), bicarbonate of potassium 20 gm. (or 309 grains), compound tincture of lavender 30 Cc. (or 1 fl.ounce), distilled water a sufficient quantity to make 1000 Cc. (or 33.8 fl. ounces). The arsenous acid and potassium bicarbonate are to be boiled together with 100 Cc. (or 3½ ounces) of water until dissolved, and then enough distilled water added to make the solution measure, when cold, 970 Cc. (or 32.8 fl.ounces); to this the compound tincture of lavender is then to be added and the liquid filtered through paper. <U. S., p 239. F C F, p 565.

LIQUOR POTASSII CITRATIS. Solution of Potassium Citrate. MISTURA POTASSII CITRATIS. "An aqueous liquid containing in solution about 9 per cent. of anhydrous potassium citrate, $K_3C_6H_5O_7$, together with small amounts of citric and carbonic acids." <U. S., p 240. F C F, p 565.

Potassium carbonate 8 gm. (or 1 ounce), citric acid 6 gm. (or ¾ ounce), water a sufficient quantity. The salts are each to be separately dissolved in 40 Cc. (or 5 ounces) of water and the solutions separately filtered, washing the filters with enough water to obtain of each solution 50 Cc. (or 6¼ fl.ounces). When ready the solutions are to be mixed and when effervescence has nearly ceased transferred to a bottle. This preparation should be freshly made when wanted for use.

LIQUOR SODÆ. Solution of Soda. SOLUTION OF SODIUM HYDRATE. "An aqueous solution of sodium hydrate, NaOH, con-

taining about 5 per cent. of the hydrate." <U. S., p 240. F C F, p 566.

Sodium carbonate 170 gm. (or 6 ounces), lime 50 gm. (or 1¾ ounces), distilled water a sufficient quantity. The sodium carbonate is to be dissolved in 400 Cc. (or 14 ounces) of boiling distilled water. The lime is to be slaked and mixed with 400 Cc. (or 14 ounces) of distilled water, the mixture is to be poured into a tared (weighed) bottle and heated to boiling and the solution of sodium carbonate is to be gradually added to it and the whole boiled during 10 minutes, then enough distilled water is to be added to make the weight 1000 gm. (or 32¼ ounces). Most druggists prepare this solution by dissolving 56 gm. (or 1 ounce) of soda (caustic soda), in distilled water 944 gm. (or 32 fl.ounces).

The sp. gr. of this solution is about 1.059 at N T.

LIQUOR SODÆ CHLORATÆ. Solution of Chlorinated Soda. LABARRAQUE'S SOLUTION. Sodium carbonate, 150 gm. (or 3 ounces), chlorinated lime 75 gm. (or 1½ ounces), water a sufficient quantity to make 1000 gm. (or 20 ounces). The chlorinated lime is to be triturated with 200 Cc. (or 6 ounces) of water, gradually added and after the heavier particles have subsided the thinner portion filtered. The residue is again to be triturated with 200 Cc. (or 6 ounces) of fresh water and filtered, adding through the filter 100 Cc. (or 3 ounces) of water. The sodium carbonate is to be dissolved in 300 Cc. (or 9 ounces) of hot water and the solution added to the filtered solution of chlorinated lime, stirring the mixture thoroughly, and if it becomes gelatinous, warming the vessel containing it until the contents liquify. This is then to be filtered through a new filter, washing the filter with enough water to make 1000 gm. (or 2 ounces). <U. S., p 241. F C F, p 566.

The present Pharm. increases the quantity of sodium carbonate fifty per cent. and slightly reduces the chlorinated lime. It will be remembered that the standard of chlorine strength of chlorinated lime in the new Pharm. is 35 per cent. instead of 25 per cent. as in the former revision; this would demand a larger quantity of sodium carbonate, but the quantity directed still makes the proportion of the sodium salt considerably increased, The sp. gr. of the present preparation is 1.052 the former official was 1.044.

LIQUOR SODII ARSENATIS. Solution of Sodium Arsenate. Sodium arsenate deprived of its water of crystallization by a heat not exceeding 149° C. (300° F.), 1 gm. (or 15.4 grains), distilled water a sufficient quantity to make 100 Cc. (or 3.38 fl.ounces) (This is equivalent to 27 grains of the salt with water enough to make 6 fl.ounces) The sodium arsenate is to be dissolved in a

sufficient quantity of distilled water to make the required measure. <U. S., p 242. F C F, p 567.

Note the change of spelling of both the Latin and English titles by the omission of i in the last word.

LIQUOR SODII SILICATIS. Solution of Sodium Silicate. <U. S., p 242. F C F, p 567.

This solution is more commonly known as "water glass," or "liquid glass." Its sp. gr is 1.300 to 1.400 at N T.

LIQUOR ZINCI CHLORIDI. Solution of Zinc Chloride. "An aqueous solution of zinc chloride, $ZnCl_2$, containing about 50 per cent., by weight, of the salt." <U. S., p 243. F C F, p 568.

The present formula is zinc, granulated, 240 gm. (or 2 ounces), hydrochloric acid 840 gm. (or 7 ounces), nitric acid 12 gm. (or 1 ounce), precipitated zinc carbonate, 12 gm. (or 1 ounce), distilled water a sufficient quantity. The zinc is to be put in a glass or porcelain vessel and 150 Cc. (or 1¼ ounces) of distilled water added. The hydrochloric acid is to be gradually added and the mixture digested until the acid is saturated, the solution is then to be poured off, the nitric acid added, and the solution evaporated to dryness, heating the mass to fusion at a temperature not exceeding 115°C. (239° F.). Let it cool and dissolve it in a sufficient amount of distilled water to make the product weigh 1000 gm. (or 8¼ ounces). To this solution add the precipitated zinc carbonate and let it set for 24 hours with occasional agitation, then set it aside until the precipitate has subsided and finally separate the clear solution by decantation.

The sp. gr. of this solution is 1.535 at N T.

LITHII BENZOAS. Benzoate of Lithium. $LiC_7H_5O_2$.

This salt of Lithium is soluble in 4 parts of water and in 12 parts of alcohol, at N T. <U. S., p 243. F C F, p 593.

LITHII BROMIDUM. Lithium Bromide. LiBr.

Soluble at N T, in 0.6 part of water and very soluble in alcohol. This is the most soluble salt of Lithium, U. S., p 244. F C F, p 593.

LITHII CARBONAS. Lithium Carbonate. Li_2CO_3.

Soluble at N T. in 80 parts of water, and in 140 parts of boiling water; but insoluble in alcohol, <U. S., p 245. F C F, p 594.

LITHII CITRAS. Lithium Citrate. $Li_3C_6H_5O_7$.

Soluble in 2 parts of water at N T., but nearly insoluble in alcohol.

LITHII CITRAS EFFERVESCENS. Effervescent Lithium Citrate. *new.* Lithium carbonate 70 gm. (or 1 ounce), sodium bicarbonate 280 gm. (or 4 ounces), citric acid 370 gm. (or 5¼ ounces), sugar in fine powder, a sufficient quantity to make 1000

gm. (or 14⅓ ounces). The citric acid is to be triturated with about 200 gm. (or 3 ounces) of sugar and the mixture thoroughly dried. The lithium carbonate and sodium bicarbonate are then to be added and enough sugar to make 1000 gm. (or 14⅓ ounces).

This, or a similar preparation is now put up in the form of tablets and extensively sold. One of the tablets is dropped into a glass of water and dissolves with effervescence, making "lithia water."

LITHII SALICYLAS. Lithium Salicylate. $LiC_7H_5O_3$.

This lithium salt deliquesces when exposed to moist air, and is very soluble in water and alcohol. <U. S., p 246. F C F, p 595.

MAGNESIA. Magnesia. LIGHT MAGNESIA. CALCINED MAGNESIA. MgO.

It is almost insoluble in water and alcohol. When 1 part of magnesia is mixed thoroughly with 15 parts of water in a glass and allowed to stand for half an hour, it forms a gelatinous mass, and the glass may be inverted without it dropping out, *Milk of Magnesia* may be made by mixing 1 part of magnesia with 19 parts of water.

MAGNESIA PONDEROSA. Heavy Magnesia. MgO.

This is the same chemically as the preceding, but is made from heavy carbonate of magnesium instead of light. It differs from the former in not uniting readily with water to form a gelatinous hydrate. <U. S., p 249. F C F, p 599.

MAGNESII CARBONAS. Magnesium Carbonate. Approximately, $Mg(CO_3)_4 . Mg(OH)_2 + 5H_2O$.

Almost insoluble in water, insoluble in alcohol. <U. S., p 249. F C F, p 599.

MAGNESII CITRAS EFFERVESCENS. Effervescent Magnesium Citrate. This takes the place of the former official *Magnesii Citras Granulatus*, the formula differing slightly.

Magnesium carbonate 10 gm. (or 1 ounce av), citric acid 46 gm. (or 4 ounces av. + 262 grains), sodium bicarbonate 34 gm. (or 3 ounces av. + 175 grains), sugar in fine powder 8 gm. (or 350 grains), alcohol and water each a sufficient quantity. The magnesium carbonate is to be mixed intimately with 30 gm. (or 3 ounces) of citric acid and 4 Cc. (or 3 fl.drachms) of distilled water so as to form a thick pasty mass. This is to be dried at a temperature not exceeding 30° C. (86° F.), and reduced to a fine powder; it is then to be intimately mixed with the sugar and the sodium bicarbonate and the remainder of the citric acid previously finely powdered. The powder is then to be dampened with a sufficient quantity of alcohol to form a mass, which is to be rubbed through a tinned-iron sieve and then dried by gentle heat and reduced to a coarse granular powder. <U. S., p 250. F C F, p 600.

This must be kept in well closed vessels, as it deliquesces on exposure to the air. It is soluble in 2 parts of water, with effervescence, caused by evolution of CO_3. In powdered form, similar preparations have been very popular proprietary medicines, as Tarrant's Effervescing Seltzer Aperient, and manufacturing pharmacists have introduced similar granular salts which have been quite popular. The dose, as a laxative is from 1 to 3 teaspoonfuls in part of a glass of water.

MAGNESII SULPHAS. Magnesium Sulphate. EPSOM SALT. $MgSO_4+7H_2O$.

Soluble in 1.5 parts of water at N T., and 0.7 of boiling water; insoluble in alcohol. <U. S., p 250. F C F, p 601.

MAGNESII SULPHIS. Sulphite of Magnesium. This salt which was official in the 1880 Pharm., is now dismissed. <F C F, p 601.

MALTUM. Malt. This was official in the 1880 Pharm., but is now dismissed. <F C F, p 603.

MANGANI DIOXIDUM. Manganese Dioxide. MANGANI OXIDUM NIGRUM, PHARM. 1880. BLACK OXIDE OF MANGANESE. "Native crude Manganese Dioxide, containing at least 66 per cent. of the pure dioxide, MnO_2." <U. S., p 251. F C F, p 614.

It is insoluble in water or alcohol. It combines, when heated with some acids and other substances, forming salts of manganese and liberating oxygen.

MANGANI SULPHAS. Manganese Sulphate. MANGANOUS SULPHATE. $MnSO_4+4H_2O$.

Soluble in 0.8 part of water at N T., and in 1 part of boiling water; insoluble in alcohol,

MASSA COPAIBÆ. Mass of Copaiba. SOLIDIFIED COPAIBA. In the present Pharm. the formula is changed by the addition of a little water, and the manipulation by the application of heat. Copaiba 94 gm. (or 1 ounce), magnesia 6 gm. (or 28 grains). The magnesia is to be triturated with a little water in a capsule until it is uniformly dampened throughout. The copaiba is then to be added gradually and thoroughly mixed, and the mixture heated during half an hour, stirring frequently. It is then transferred to a suitable vessel or jar until it has acquired a pilular consistence.

This has been formerly known as Pilulæ Copaibæ.

MASSA FERRI CARBONATIS. Mass of Ferrous Carbonate. VALLET'S MASS. The formula for this preparation is the same as before, except that metric weight is directed instead of parts. Ferrous sulphate in clear crystals 100 gm. (or 4 ounces), sodium carbonate 100 gm. (or 4 ounces), clarified honey 38 gm. (or 1½ ounces), sugar, in coarse powder, 25 gm. (or 1 ounce), syrup and distilled water of each a sufficient quantity. The ferrous sulphate and the sodium carbonate are each to be dissolved separately in

200 Cc. (or 8 ounces) of boiling distilled water, and after adding 20 Cc. (or $\frac{4}{5}$ fl.ounce) of syrup to the iron solution, both solutions are to be separately filtered. The sodium carbonate solution is then to be poured into a bottle of about 500 Cc. (or 20 fl.ounces) capacity, and the iron solution gradually added, allowing the carbonic acid gas to escape; then enough distilled water is added to fill the bottle and the precipitate is allowed to subside. It is then to be washed thoroughly with distilled water mixed with 5 per cent., by volume, (19—1) of syrup, until the washings have no saline taste, and the precipitate is then to be drained on a muslin strainer, expressed as dry as possible, mixed at once with the honey and sugar, and the mixture evaporated in a tared capsule by means of a water-bath with constant stirring until it is reduced to 100 gm. (or 4 ounces). <U. S., p 253. . F C F, p 616.

This was known in the 1870 Pharm. as *Pilula Ferri Carbonatis.*

MASSA HYDRARGYRI. Mass of Mercury. PILULA HYDRARGYRI. BLUE MASS. BLUE PILL. The formula for this remains unchanged except that metric weight is directed instead of parts. Mercury 33 gm. (or 1 ounce av. + 145 grains), glycyrrhiza in No. 60 powder 5 gm. (or 88 grains), althæa in No. 60 powder 25 gm. (or 6 ounce av), glycerin 3 gm. (or 53 grains), honey of rose 34 gm. (or 1 ounce av. + 58 grains). The mercury is to be triturated with the honey of rose and glycerin until it is extinguished. The glycyrrhiza and althæa are then to be added gradually and the trituration continued until globules of mercury are no longer visible under a lens magnifying at least 10 diameters.

MEL DESPUMATUM. Clarified Honey. The present formula and process for clarified honey is entirely different than before. Honey a convenient quantity, glycerin a convenient quantity. The honey is to be intimately mixed with 2 per cent. of its weight of paper-pulp, which has been previously reduced to shreds, thoroughly washed and soaked in water, and then strongly expressed and again shredded. This is to be placed in a capsule or other convenient vessel and heat applied by water-bath, and so long as any scum arises to the surface it is to be removed. Finally enough distilled water is added to make up for loss of weight by evaporation and the honey is strained and mixed with 5 per cent. of its weight of glycerin. <U. S., p 256. F C F, p 618.

MEL ROSÆ. Honey of Rose. In the present Pharm. fluid extract of rose is taken in place of making an extract as directed in the former Pharm. Fluid extract of rose 120 Cc. (or 1 fl.ounce),

clarified honey a sufficient quantity to make 1000 gm. (or 8½ ounces av). The fluid extract is put into a weighed bottle and enough clarified honey added to make the weight of the contents 1000 gm. (or 8½ ounces av). <U. S., p 256. F C F, p 618.

MENTHOL. Menthol. $C_{10}H_{19}OH$. *new.* "A stearopten (having the character of a secondary alcohol) obtained from the official oil of peppermint (from *mentha piperita*) or from Japanese or Chinese oil of peppermint (from *mentha arvensis*). <U. S., p 258. F C F, p 649.

Menthol varies somewhat in odor and appearance of its crystals, depending upon its source. It is only very slightly soluble in water, but dissolves freely in alcohol ether, chloroform or glacial acetie acid. It melts at 43°C. (104°F.), and boils at 212°C. (413.6°F.), and slowly volatilizes at ordinary temperature. With an equal weight of camphor, thymol or chloral hydrate it forms a liquid. It was first generally introduced in the form of menthol cones or pencils which were applied for headache and neuralgia, by rubbing over the surface. It is now considerably used as an application in either cones or pencils, ointments, liniments or solutions, and also given internally in solution, in doses of ½ to 2 grains. It is also used by inhalation for various ailments.

METHYL SALICYLAS. Methyl Salicylate. Artificial (or synthetic) Oil of Wintergreen. $CH_3C_5H_7O_3$. *new.* "Methyl salicylate produced synthetically." <U. S., p 258. F C F, p 620, 736.

This "artificial oil of wintergreen" is now extensively used in the place of the natural oil, and is almost identical with it in composition and characteristics. It is wholly identical with volatile oil of Betula (Birch), which is also extensively sold for oil of wintergreen, Its sp. gr. is 1.183-5 at N T. It is soluble in all proportions in alcohol and glacial acetic acid, but only slightly soluble in water.

MISTURÆ. Mixtures. In the Mixtures which were official in the former Pharm, a great transformation has taken place. *Mistura Ammoniaci, Mistura Amygdalæ, Mistura Asafatidæ, and Mistura Chloroformi* have been transferred to the class Emulsa, (which see), *Mistura Ferri et Ammonii Acetatis*, (*Basham's Mixture*), *and Mistura Potassii Citratis*, (*Neutral Mixture*) have been transferred to Liquors, (which see) and *Mistura Magnesii et Asafœtidæ* has been dismissed. In most of the mixtures which have been retained, important changes have been made, for which see the formulas.

MISTURA CRETÆ. Chalk Mixture. Compound chalk powder 200 gm. (or 1 ounce), cinnamon water, 400 Cc. (or 2 ounces), water a sufficient quantity to make 1000 gm. (or 5 ounces). The compound chalk powder is to be rubbed in a mortar with the cinnamon water, and about 200 Cc. (or 1 ounce) of water gradually added, until a uniform mixture results. This is then to be transferred to a graduated vessel, the mortar rinsed with water, and sufficient water added to make the product measure 1000 Cc. (or

5 ounces). The preparation should be freshly made for use, hence the small quantities directed. <U. S., p 259. F C F, p 623.

MISTURA FERRI COMPOSITA. Compound Iron Mixture. GRIFFITH'S MIXTURE. Ferrous sulphate in clear crystals 6 gm. (or 15 grains), myrrh in small pieces 18 gm. (or 45 grains), sugar 18 gm. (or 45 grains), potassium carbonate 8 gm. (or 20 grains), spirit of lavender 60 Cc. (or 2½ fl.drachms), rose water a sufficient quantity to make 1000 Cc. (or 5¾ fl.ounces).

The myrrh, sugar and potassium carbonate are to be rubbed in a mortar with 700 Cc. (or 4 ounces) of rose water, at first very gradually, so that a uniform mixture may result. This is then to be transferred to a graduated vessel, the spirit of lavender and the ferrous sulphate, previously dissolved in about 50 Cc. (or ¼ ounce) of water added, and to the whole enough rose water to make 1000 Cc. (or 5¾ fl.ounces). This preparation should be freshly made when wanted for use; hence the small quantity directed to be made. <U. S., p 259. F C F, p 223.

MISTURA GLYCYRRHIZÆ COMPOSITA. Compound Mixture of Glycyrrhiza. BROWN MIXTURE. Pure extract of glycyrrhizæ 50 gm. (or 1 ounce av.), syrup 50 Cc. (or 1½ fl.ounce), mucilage of acacia 100 Cc. (or 3⅓ fl.ounces), camphorated tincture of opium 120 Cc. (or 4 fl.ounces), wine of antimony 60 Cc. (or 2 fl. ounces), spirit of nitrous ether 30 Cc. (or 1 fl.ounce), water, a sufficient quantity to make 1000 Cc. (or 33⅓ fl.ounces).

The extract is to be rubbed in a mortar with 500 Cc. (or 16 fl. ounces) of water until it is dissolved, and the solution transferred to a graduated vessel containing the other ingredients. The mortar is to be rinsed with water and added, and then enough water added to make the measure 1000 Cc. (or 33⅓ fl.ounces). <U. S., p 260. F C F, p 624.

MISTURA RHEI ET SODÆ. Mixture of Rhubarb and Soda. This preparation is quite different in the present Pharm. from the former. Sodium bicarbonate 35 gm. (or 1 ounce av.), fluid extract of rhubarb 15 Cc. (or 3¼ fl.drachms), fluid extract of ipecac 3 Cc. (or 20 minims), glycerin 350 Cc. (or 10 fl.ounces), Spirit of peppermint 35 Cc. (or 1 fl.ounce), water a sufficient quantity to make 1000 Cc. (or 28½ fl.ounces).

The sodium bicarbonate is to be dissolved in about 400 Cc. (or 11½ fl.ounces) of water, the other ingredients added to the solution, and then enough water to make 1000 Cc. (or 28½ fl.ounces). <U. S., p 260. F C F, p 626.

The fluid extract of ipecac and the glycerin, are entirely new additions to this preparation.

MORPHINA. Morphine. $C_{17}H_{19}NO_3 + H_2O$. "An alkaloid obtained from opium." <U. S., p 261. F C F, p 199, 666.

The alkaloid morphine is soluble in 4350 parts of water at N T, and in 300 parts of alcohol. It forms salts with acids which are quite soluble. This was the first alkaloid discovered.

MORPHINÆ ACETAS. Morphine Acetate. $C_{17}H_{19}NO_3C_2H_4O_2 + 3H_2O$.

This salt of morphine is soluble in 2.5 parts of water, and in 47.6 parts of alcohol at N T. This is the most soluble morphine salt.

MORPHINÆ HYDROCHLORAS. Morphine Hydrochlorate. MORPHINE MURIATE. $C_{17}H_{19}NO_3HCl + 3H_2O$.

Soluble in 24 parts of water and in 62 parts of alcohol at N T., and in 0.5 part of boiling water, and in 31 parts of boiling alcohol. U. S., p 262. F C F p 121.

MORPHINÆ SULPHAS. Morphine Sulphate. $(C_{17}H_{19}NO_3)_2 H_2SO_4 + 5H_2O$.

This is the best known and most used salt of morphine. It is soluble in 21 parts of water and in 702 parts of alcohol at N T., and in 0.75 part of boiling water or 144 parts of boiling alcohol. It is almost insoluble in ether. <U. S., p 262. F C F, p 121.

MUCILAGINES. Mucilages. No change is made in the new Pharm. in this class of preparations but the dismissal of *Mucilago Cydonii*. For other mucilages <F C F, p 630.

MUCILAGO ACACIÆ. Mucilage of Acacia. Acacia, in small fragments, 340 gm. (or 3.4 ounces), water, a sufficient quantity to make 1000 gm. (or 10 ounces).

The acacia is to be washed with cold water and drained, then enough water is to be added to make the weight 1000 gm. (or 10 ounces), stirring occassionally until the acacia is dissolved. It is to be kept in well-stoppered bottles, completely filled, in a cool place. <U. S., p 263. F C F, p 630.

MUCILAGO SASSAFRAS MEDULLÆ. Mucilage of Sassafras Pith. Sassafras pith 2 gm. (or 30 grains), water 100 Cc. (or 3¼ fl.ounces).

The sassafras pith is to be macerated in the water during 3 hours and strained. It should be freshly made when wanted. < U. S., p 263. F C F, p 631.

MUCILAGO TRAGACANTHÆ. Mucilage of Tragacanth. Tragacanth 6 gm. (or 90 grains), glycerin 18 gm. (or 240 grains), water a sufficient quantity to make 100 gm. (or 3 ounces av. + 187 grains). The glycerin is to be mixed with 75 Cc. (or 2 ounces) of

water in a tared (weighed) capsule, and heated to boiling. The tragacanth is then to be added and allowed to macerate during 24 hours, stirring occasionally. Enough water is then to be added to make the mixture weigh 100 gm. (or 3 ounces av. + 187 grains), and it is to be beaten to a uniform consistence and strained forcibly through muslin. <U. S., p 264. F C F, p 632.

MUCILAGO ULMI. Mucilage of Elm. Elm, bruised, 6 gm. (or ½ ounce), water 100 Cc. (or 8 ounces). The elm is to be digested with the water on a water-bath, in a covered vessel during one hour and then strained. It should be freshly made when wanted. <U. S., p 365. F C F, p 633.

NAPHTALINUM. Naphtalin. NAPHTALENE. *new.* "A hydrocarbon obtained from coal-tar." <U. S., p 265. F C F, p 694

It will be noted that the Pharm. adopts a different spelling for the name of this substance than is given it commercially (naphthalin or naphthalene).

This new official has been well known for some time in commerce as *Moth Camphor*, *Coal-tar Camphor*, *Etc.* It is made in flakes, and in cakes and balls and is commonly used for moths, and as a disinfectant; also used in ointments and lotions for parasitis, etc. It is insoluble in water, but soluble in 15 parts of alcohol at N T., and very soluble in ether, chloroform and oils It volatilizes slowly at ordinary temperature, and rapidly when heated. It melts at 80°C. (176°F.), and boils at 218°C. (424.4°F.), its vapor is inflammable.

NAPHTOL. Naphtol. BETA-NAPHTOL. $C_{10}H_7OH$. *new.* "A phenol occurring in coal-tar, but usually prepared artificially from naphtalin." <U. S., p 265. F C F, p .

It will be noted that the Pharm. adopts a different spelling for the name of this substance than is given to it commercially, (naphthol).

Soluble in about 1000 parts of water and in 0 75 part of alcohol at N T.; also very soluble in ether, chloroform, or solutions of the caustic alkalies. It readily sublimes when heated; it melts at 122°C. (251.6 F.), and boils at 286°C. (546.8°F.). This is used for similar purposes as the foregoing, in the form of ointments, solutions, etc. It has also been given internally in doses of 5 to 8 grains, in typhus fever and obstinate diarrhœa.

OLEATA. Oleates. In the new Pharm, one oleate *Oleatum Zinci*, has been added and oleate of mercury has been doubled in strength; only 3 oleates are official. For other oleates, of which there are more than a score, <F C F, p 655 to 659

OLEATUM HYDRARGYRUM. Oleate of Mercury. Yellow mercuric oxide thoroughly dried 200 gm. (or 2 ounces), oleic acid 800 gm. (or 8 ounces). The oleic acid is to be put into a capacious mortar and to it the yellow mercuric oxide is to be gradually added by sifting it upon the surface of the acid, with which it is to be incorporated by constant stirring. The mixture is then to be

set aside in a warm place at a temperature not exceeding 40° C. (104° F.), and frequently stirred until the oxide is dissolved. <U. S., p 267. F C F, p 656.

It will be observed that this preparation is double the strength of mercury, (20 per cent.), of the former official (10 per cent.), and that the manipulation is quite different than before.

OLEATUM VERATRINÆ. Oleate of Veratrine. Veratrine 2 gm. (or 10 grains),oleic acid 98 gm. (or 490 grains). The veratrine (alkaloid) is to be rubbed with a small quantity of oleic acid in a warm mortar to a smooth paste, and then the remainder of the oleic acid, previously warmed, is to be added and the mixture frequently stirred until the veratrine is dissolved. <U. S., p 266. F C F, p 656.

OLEATUM ZINCI. Oleate of Zinc. *new.* Zinc oxide 50 gm. (or ½ ounce), oleic acid 950 gm. (or 9½ ounces). The oleic acid is to be put into a capacious capsule and the zinc oxide gradually added by sifting it upon the surface of the acid with which it is to be incorporated by constant stirring. The mixture is to be set aside for a few hours, then heated on a water-bath, frequently stirring, until the oxide is dissolved. <U. S., p 267. F C F, p 659

OLEORESINÆ. Oleoresins. No change is made in this class of preparations, but it should be remembered, that the ether now directed is the new official ether (96 per cent), nearly corresponding to the 1880 stronger ether and not the e her (74 per cent.), of the former Pharm.

OLEORESINA ASPIDII. Oleoresin of Aspidium. Aspidium recently reduced to No. 60 powder, 500 gm. (or 1 pound), ether a sufficient quantity. The aspidium is to be exhausted in a suitable, closely-covered percolator, arranged with a stop-cock, by percolating with ether. The greater part of the ether is to be recovered by distillation and the residue transferred to a capsule and the remaining ether allowed to evaporate spontaneously. The oleoresin which remains is to be kept in a closely-stoppered bottle, and shaken before using. <U. S., p 267. F C F, p 660.

OLEORESIN CAPSICI. Oleoresin of Capsicum. Capsicum in No. 60 powder, 500 gm. (or 1 pound), ether a sufficient quantity. The capsicum is to be percolated with ether in a suitable, closely covered percolator arranged with a stop-cock, until exhausted. The greater part of the ether is to be recovered by distillation and the remainder allowed to evaporate spontaneously from the residue placed in a capsule. The liquid portion is then to be poured off, the remainder strained, and the strained portion added

to the poured off liquid, rejecting the fatty residue left on the strainer. <U. S., p 267. F C F, p 661.

OLEORESINA CUBEBÆ. Oleoresin of Cubeb. Cubeb in No. 30 powder 500 gm. (or 1 pound), ether a sufficient quantity. The cubeb is to be percolated with ether in a closely covered percolator arranged with a stop-cock, until exhausted. The greater portion of the ether is to be recovered by distillation and the remainder allowed to evaporate spontaneously from the residue placed in a capsule. The oleoresin which remains is to be kept in a well-stopped bottle and the liquid portion only used. <U. S., p 268. F C F, p 661.

OLEORESINA LUPULINI. Oleoresin of Lupulin. Lupulin 100 gm. (or 4 ounces), ether a sufficient quantity. The lupulin is to be percolated with ether in a suitable closely covered percolator, arranged with a stop-cock, until exhausted. The greater part of the ether is to be recovered by distillation and the remainder allowed to evaporate spontaneously from the residue placed in a capsule, and the oleoresin, which remains, kept in a well-stopped bottle. <U. S., p 268. F C F, p 661.

OLEORESINA PIPERIS. Oleoresin of Pepper. Pepper in No. 60 powder 500 gm. (or 1 pound), ether a sufficient quantity. The pepper is to be percolated with ether in a suitable closely covered percolator, arranged with a stop-cock, until exhausted. The greater part of the ether is to be recovered by distillation, and the remainder allowed to evaporate spontaneously from a capsule. The oleoresin is then to be separated from the piperin, which has deposited, by straining through muslin with pressure, and kept in a well-stopped bottle. <U. S., p 269. F C F, p 661.

OLEORESINA ZINGIBERIS. Oleoresin of Ginger. Ginger in No. 60 powder 500 gm. (or 1 pound), ether a sufficient quantity. The ginger is to be percolated with ether in a suitable closely covered percolator provided with a stop-cock, until exhausted. The greater part of the ether is then to be recovered by distillation, and the remainder allowed to evaporate spontaneously from a capsule, leaving the oleoresin, which should be kept in a well-stopped bottle. <U. S., p 269. F C F, p 661.

OLEA. Oils. In the new Pharm. three oils have been added, *Oleum Betulæ Volatile*, *Oleum Cadinum*, and *Oleum Terebinthinæ Rectificatum*, and four dismissed, *Oleum Lavendulæ*, *Oleum Rutæ*, *Oleum Succini and Oleum Valerianæ*, otherwise no changes of importance have been made.

OLEUM ADIPIS. Lard Oil. "A fixed oil expressed from lard at low temperature." <U. S., p 269. F C F, p 638.

Sp. gr. 0.910 to 0.920 at N T. At a little below 10°C. (50°F.), it deposits white, granular, fatty particles, and at near 0°C. (32°F.) it forms a semi-solid white mass.

OLEUM ÆTHEREUM. Etherial Oil. "A volatile liquid consisting of equal volumes of heavy oil of wine and ether." Alcohol 1000 Cc. (or 10 fl.ounces), sulphuric acid 1000 Cc. (or 10 fl.ounces), distilled water 25 Cc. (or 2½ fl.ounces), ether a sufficient quantity. The acid is to be added slowly to the alcohol, mixing them thoroughly after each addition, and the mixture is allowed to stand in a closed flask for 24 hours or until the liquid is clear. The clear liquid is then to be poured into a tubulated retort of such capacity that the mixture shall nearly fill it. A thermometer is to be inserted through the tubelature so that the bulb shall be deeply immersed in the liquid, and, having connected the retort with a well-cooled condenser, and also having connected with the receiver a bent glass tube for conducting the uncondensed gases into water, heat is to be applied by means of a sand-bath to between 150° and 160° C. (302° – 320° F.), and the liquid distilled until oily drops cease to come over, or until a black froth, which forms on the surface, begins to rise in the retort. The yellow etherial liquid is then to be separated from the distillate and exposed in a shallow capsule to the air for 24 hours. It is then to be transferred to a wetted filter and when the watery portion has drained off, the oil which is left on the filter is to be washed with the distilled water, which should be as cold as possible. When this also has drained off the oil is to be transferred to a graduated measure and to it an equal volume of ether added. It is then to be preserved in small glass-stopped vials in a cool place. <U. S., p 270. F C F, p 82.

This is directed to be used in making spiritus ætheris compositus or Hoffman's anodyne. It is seldom prepared by druggists. Sp. gr. 0.910 at N T.

OLEUM AMYGDALÆ AMARÆ. Oil of Bitter Almond. "A volatile oil obtained from bitter almond by maceration with water and subsequent distillation." <U. S., p 271. F C F, p 645.

The sp. gr. of this oil is 1.060 to 1.070 at N T.; it boils at about 180°C. (356°F.) It is soluble in 300 parts of water at N T. and in alcohol or ether in all proportions.

OLEUM AMYGDALÆ EXPRESSUM. Expressed Oil of Almond. "A fixed oil expressed from bitter or sweet almond." <U. S., p 271. F C F, p 638.

Sp. gr. 0.915 to 0.920 at N T. Almost insoluble in alcohol; soluble in chloroform in all proportions. It remains clear at —10°C. (14°F.), and does not congeal until near —20°C. (— 4°F.).

OLEUM ANISI. Oil of Anise. "A volitile oil distilled from anise." <U. S., p 272. F C F, p 646.

The sp. gr. of this oil is about 0.980 to 0.990 at N T. It solidifies to a white, crystalline mass between 10° and 15°C. (50 to 59°F.) and is, therefore, in Winter, often seen in a solid condition.

OLEUM AURANTII CORTICIS. Oil of Orange Peel. "A volatile oil obtained by expression from the fresh peel of either the bitter orange, *Citrus vulgaris*, or the sweet orange, *Citrus Aurantium*" <U. S., p 272. F C F, p 646.

Sp. gr. about 0.850 at N T. Soluble in about 4 times its weight of alcohol, and in an equal volume of glacial acetic acid. Should be kept in small, full bottles, in a cool, dark place.

OLEUM AURANTII FLORUM. Oil of Orange Flowers. Oil of Neroli. "A volatile oil distilled from the fresh flowers of the bitter orange, *Citrus vulgaris*." <U. S., p 273. F C F, p 646.

Sp. gr. 0.875 to 0.890 at N T. Soluble in an equal volume of alcohol.

OLEUM BERGAMOTTÆ. Oil of Bergamot. Oleum Bergamii, Pharm. 1880. "A volatile oil obtained by expression from the rind of the fresh fruit of *Citrus Bergamia*." <U. S., p 273. F C F, p 646.

Note the change in the Latin title. Sp. gr. 0.875 to 0.890 at N T. Soluble in 2 volumes of alcohol and in all proportions in glacial acetic acid.

OLEUM BETULÆ VOLATILE. Volatile Oil of Betula. Oil of Sweet Birch. *new.* "A volatile oil obtained by distillation from the bark of *Betula lenta*, (sweet birch)." <U. S., p 274. F C F, p 652.

This oil is identical with methyl salicylate, $CH_3C_7H_5O_3$, and is nearly identical with oil of gaultheria, for which it is largely substituted in commerce. Sp. gr. about 1.183 at N T. Soluble in all proportions in alcohol and glacial acetic acid.

OLEUM CADINUM. Oil of Cade. Oleum Juniperi Empyreumaticum. "A product of the dry distillation of the wood of *Juniperus Oxycedrus*." <U. S., p 274. F C F, p 648.

This is frequently called juniper tar. Sp. gr. about 0.990 at N T. Almost insoluble in water; slightly soluble in alcohol, and completely soluble in ether or chloroform.

OLEUM CAJUPUTI. Oil of Cajuput. "A volatile oil distilled from the leaves of *Melaleuca Leucadendron*." <U. S., p 274. F C F, p 646.

Sp. gr. 0.922 to 0.929 at N T. Soluble in an equal volume of alcohol.

OLEUM CARI. Oil of Caraway. "A volatile oil distilled from caraway." <U. S., p 275. F C F, p 647.

Sp. gr. 0.910 to 0.920 at N T. Soluble in an equal volume of alcohol.

OLEUM CAROPHYLLI. Oil of Cloves. "A volatile oil distilled from cloves." <U. S., p 275. F C F, p 647.

Sp. gr. 1.060 to 1.067 at N T. Soluble in an equal volume of alcohol or glacial acetic acid.

OLEUM CHENOPODII. Oil of Chenopodium. Oil of American Wormseed. "A volatile oil distilled from Chenopodium." <U. S., p 275. F C F, p 647.

Sp. gr. about 0.970 at N T. Soluble in alcohol or in a mixture of 3 volumes of alcohol with one volume of water, to the extent of 10 per cent.

OLEUM CINNAMOMI. Oil of Cinnamon. Oil of Cassia. "A volatile oil distilled from Cassia Cinnamon." <U. S., p 276. F C F, p 647.

Sp. gr. 1.055 to 1.065 at N T. Soluble in an equal volume of alcohol or glacial acetic acid.

OLEUM COPAIBÆ. Oil of Copaiba. "A volatile oil distilled from Copaiba." <U. S., p 276. F C F, p 647.

Sp. gr. 0.890 to 0.910 at N T., increasing with age. Soluble in about 10 times its volume of alcohol, forming a slightly turbid liquid.

OLEUM CORIANDRI. Oil of Coriander. "A volatile oil distilled from Coriander." <U. S., p 276. F C F, p 647.

Sp. gr. 0.870 to 0.885 at N T. Soluble in alcohol and in a mixture of 3 volumes of alcohol to 1 volume of water, to the extent of 10 per cent. Also soluble in an equal volume of glacial acetic acid.

OLEUM CUBEBÆ. Oil of Cubeb. "A volatile oil distilled from Cubeb." <U. S., p 277. F C F, p 647.

Sp. gr. about 0.920 at N T. Soluble in an equal volume of alcohol.

OLEUM ERIGERONTIS. Oil of Erigeron. Oil of Fleabane. "A volatile oil distilled from the fresh flowering herb of *Erigeron Canadense*." <U. S., p 277. F C F, p 647.

Sp. gr. about 0.850 at N T., increasing with age. Soluble in an equal volume of alcohol, or glacial acetic acid.

OLEUM EUCALYPTI. Oil of Eucalyptus. "A volatile oil distilled from the fresh leaves of *Eucalyptus globulus*, *Eucalyptus oleosa*, and some other species. <U. S., p 277. F C F, p 648.

Sp. gr. 0.915 to 0.925 at N T. Soluble in all proportions in alcohol, carbon disulphide, or glacial acetic acid.

OLEUM FŒNICULI. Oil of Fennel. "A volatile oil distilled from fennel. It should be kept in well-stopped bottles, in a cool place, and if it has partly or wholly solidified, it should be com-

pletely liquified by warming before being dispensed." <U. S., p 278. F C F, p 648.

Sp. gr. not less than 0.960 at N T. It usually solidifies between 5° and 10°C. (41° and 50°F.), but occasionally remains liquid at a much lower temperature. It is soluble in an equal volume of alcohol or glacial acetic acid.

OLEUM GAULTHERIÆ. Oil of Gaultheria. Oil of Wintergreen. "A volatile oil distilled from the leaves of *Gaultheria procumbens* (wintergreen) consisting almost entirely of methyl salicylate, $CH_3C_7H_6O_3$, and nearly identical with volatile oil of betula." <U, S,, p 278. F C F, p 648.

Sp. gr. 1.175 to 1.185 at N T., boiling point 218° to 221°C. (424.4 to 429.8°F.). Soluble in all proportions in alcohol or glacial acetic acid.

OLEUM GOSSYPII SEMINIS. Cotton Seed Oil. "A fixed oil expressed from the seed of *Gossypium herbaceum*, and other species of *Gossypinm* and subsequently purified. <U. S., p 278. F C F p 638.

Sp. gr. 0.920 to 0.930 at N T. Almost insoluble in alcohol, but readily soluble in ether, chloroform and carbon disulphide.

OLEUM HEDEOMÆ. Oil of Hedeoma. Oil of Pennyroyal. "A volatile oil distilled from Hedeoma (pennyroyal)." <U. S., p 279. F C F, p 648.

Sp. gr. about 0.930 to 0.940. Soluble in alcohol and in a mixture of alcohol 3 parts with water 1 part, Also readily soluble in carbon disulphide or glacial acetic acid.

OLEUM JUNIPERI. Oil of Juniper. "A volatile oil distilled from the fruit of *Juniperus communis*." <U. S., p 279. F C F, p 648.

Sp. gr. 0.850 to 0.890 at N T. Soluble in 4 times its volume of alcohol, making a somewhat turbid liquid; also soluble in an equal volume of carbon disulphide.

OLEUM LAVENDULÆ FLORUM. Oil of Lavender Flowers. "A volatile oil distilled from the fresh flowers of *Lavendula Officinalis*." <U. S., p 280. F C F, p 648.

Sp. gr. 0.885 to 0.890 at N T. Soluble in all proportions in alcohol, and in 3 times its volume of a mixture of 3 volumes of alcohol with 1 volume of water; also soluble in glacial acetic acid.

OLEUM LIMONIS. Oil of Lemon. "A volatile oil obtained by expression from fresh lemon peel." <U. S., p 280. F C F, p 648.

Sp. gr. 0.858 to 0.859 at N T. Soluble in 3 times its volume of alcohol, also soluble in all proportions in absolute alcohol, carbon disulphide and glacial acetic acid. This oil should be kept in small bottles, completely filled and in a dark cool place.

OLEUM LINI. Linseed Oil. Oil of Flaxseed. "A fixed oil

expressed from linseed, without the aid of heat." <U. S., p 280. F C F, p 638.

Druggists are obliged to use such linseed oil as is found in the market, which, being made by patented processes, for painting, rarely meets the requirements of the Pharm. Sp. gr. 0.930 to 0.940 at N T. Soluble in about 10 parts of absolute alcohol, and in all proportions in ether, chloroform, benzin, carbon disulphide and oil of turpentine.

OLEUM MENTHÆ PIPERITÆ. Oil of Peppermint. "A volatile oil distilled from peppermint." <U. S., p 281. F C F, p 649

Sp. gr. 0.900 to 0.920 at N T. Soluble in an equal volume of alcohol, but becoming somewhat turbid when a larger proportion is added. Soluble in all proportions in carbon disulphide and glacial acetic acid. When exposed to a very low temperature for 15 minutes or more, it becomes cloudy and deposits crystals of menthol.

OLEUM MENTHÆ VIRIDIS. Oil of Spearmint. "A volatile oil distilled from spearmint." <U. S., p 282. F C F, p 649.

Sp. gr. 0.930 to 0.940 at N T. Soluble in an equal volume of alcohol, but becoming somewhat turbid when a larger proportion is added; also soluble in an equal volume of glacial acetic acid, and with half its volume of carbon disulphide.

OLEUM MORRHUÆ. Cod Liver Oil. Oleum Jecoris Aselli. "A fixed oil obtained from the fresh livers of *Gadus Morrhua*, and of other species of *Gadus*." <U. S., p 282. F C F, p 639.

Sp. gr. 0.920 to 0.925 at N T. Almost insoluble in alcohol, but readily soluble in ether, chloroform, or carbon disulphide. The best qualities are obtained from the coast of Norway.

OLEUM MYRCIÆ. Oil of Myrcia. Oil of Bay. "A volatile oil distilled from the leaves of *Myrcia acris*." <U. S., p 283. F C F, p 649.

Sp. gr. 0.975 to 0.990 at N T. Its solution in an equal volume of alcohol or glacial acetic acid is somewhat turbid. When mixed with an equal volume of concentrated solution of sodium hydrate it forms a semi-solid mass. It is much used for making bay rum, and as a flavoring in hair oils, etc.

OLEUM MYRISTICÆ. Oil of Nutmeg. "A volatile oil distilled from nutmeg." <U. S., p 283. F C F, p 649

Sp. gr. 0.870 to 0.900 at N T. Soluble in an equal volume of alcohol, or glacial acetic acid and in all proportions in carbon disulphide.

OLEUM OLIVE. Olive Oil. "A fixed oil expressed from the ripe fruit of *Olea Europæa*." <U. S., p 284. F C F, p 639.

The Pharm. recognizes only the pale-yellow or the light greenish-yellow oil, but it is often found in the market, of a pronounced greenish shade. Sp. gr. 0.915 to 0.918 at N T.; almost insoluble in alcohol, but readily soluble in ether, cholorform, or carbon disulphide. When cooled to about 10°C. (50°F.), the oil begins to become cloudy from crystallization, and at 0°C. (32°F.), it becomes a whitish, granular mass.

OLEUM PHOSPHORATUM. Phosphorated Oil. Phosphorus 1 gm. (or 1 ounce), expressed oil of almond, ether, each a sufficient quantity. Into a flask put a quantity of expressed oil of almond and heat it on a sand-bath to 250° C. (482° F.), and keep it at that temperature for 15 minutes. Allow it to cool and filter it. Take 90 gm. (or 9 ounces) of the filtered oil, together with the phosphorus previously well dried by filtering paper, and put them into a dry, tared (weighed) bottle capable of holding about 120 Cc. (or 12 ounces), stop closely and heat the bottle in a water-bath until the phosphorus melts, then agitate it until the phosphorus dissolves, allow it to cool, add enough ether to make the mixture weigh 100 gm. and agitate it again, and finally transfer the solution to small glass-stoppered vials, which should be completely filled and kept in a cool and dark place. <U. S., p 284. F C F, p 640.

OLEUM PICIS LIQUIDÆ. Oil of Tar. "A volatile oil distilled from tar." <U. S., p 285. F C F, p 649.

Sp. gr. about 0.970 at N T. Soluble in alcohol, its solution having an acid reaction.

OLEUM PIMENTÆ. Oil of Allspice. "A volatile oil distilled from pimenta." <U. S., p 285. F C F, p 649.

Sp. gr. 1.045 to 1.055 at N T. Soluble in an equal volume of alcohol, or glacial acetic acid. When mixed with an equal volume of a concentrated solution of sodium hydrate, it forms a semi-solid mass.

OLEUM RICINI. Castor Oil. "A fixed oil expressed from the seed of *Ricinus communis*." <U. S., p 286. F C F, p 629.

Sp. gr. 0.950 to 0.970 at N T. Soluble in an equal volume of alcohol, and in all proportions in absolute alcohol or in glacial acetic acid. When cooled to 0°C. (32°F.) it becomes turbid, and at —18°C. (—4°F) congeals to a yellowish mass.

OLEUM ROSÆ. Oil of Rose. "A volatile oil distilled from the fresh flowers of *Rosa damascena*." It should be kept in well-stoppered vials in a cool place, protected from light. When dispensed it should be completely liquified by warming, if necessary, and well mixed by agitation. <U. S., p 286. F C F, p 650.

Sp. gr. 0.865 to 0.880 at 26°C. (68°F.). It is slightly soluble in alcohol. At ordinary temperature oil of rose is wholly or partially crystallized, but becomes liquid when the temperature is raised to about 85° to 90° F.

OLEUM ROSMARINI. Oil of Rosmary. "A volatile oil distilled from the leaves of *Rosmarinus officinalis*." <U. S., p 287. F C F, p 650.

Sp. gr. 0.895 to 0.915 at N T. Soluble in an equal volume of alcohol, or glacial acetic acid.

OLEUM SABINÆ. Oil of Savin. "A volatile oil distilled from savine." <U. S., p 287. F C F, p 650.

Sp. gr. 0.910 to 0.940 at N T. Soluble in an equal volume of alcohol, or glacial acetic acid.

OLEUM SANTALI. Oil of Santal. Oil of Sandal Wood. "A volatile oil distilled from the wood of *Santalum album*." <U. S., p 287. F C F, p 650.

Sp. gr. 0.970 to 0 978 at N T. Readily soluble in alcohol, also in a mixture of 3 volumes of alcohol with 1 volume of water, to the extent of 10 per cent.

OLEUM SASSAFRAS. Oil of Sassafras. "A volatile oil distilled from sassafras," <U. S., p 288. F C F, p 650.

Sp. gr. 1.070 to 1.090 at N T. Soluble in all proportions in alcohol; also in glacial acetic acid and in carbon disulphide.

OLEUM SESAMI. Oil of Sesamum. Sesame Oil, Teel Oil, Benne Oil. "A fixed oil expressed from the seed of *Sesamum indicum*." <U. S., p 288. F C F, p 639.

Sp. gr. 0.919 to 0.923 at N T. Almost insoluble in alcohol. When cooled to —3°C (26.6°F.), it becomes thick, and at —5°C. (23°F.), it congeals to a yellowish-white mass.

OLEUM SINAPIS VOLATILE. Volatile Oil of Mustard. "A volatile oil obtained from Black Mustard by maceration with water and subsequent distillation." <U. S., p 288. F C F, p 134, 650.

This oil should be carefully handled and opened, as its odor is very penetrating and irritating. Sp. gr. 1.018 to 1.029 at N T. Freely soluble in alcohol, ether or carbon disulphide.

OLEUM TEREBINTHINÆ. Oil of Turpentine. "A volatile oil distilled from Turpentine." <U. S., p 289. F C F, p 651.

Sp. gr. 0.855 to 0.870 at N T. Boils at 155°C to 170°C. (311° to 338°F.). Soluble in 3 times its volume of alcohol, also in an equal volume of glacial acetic acid.

OLEUM TEREBINTHINÆ RECTIFICATUM. Rectified Oil of Turpentine. *new.* Oil of turpentine a convenient quantity, lime water a convenient quantity. The oil is to be shaken thoroughly with 6 times its volume of lime water, and the mixture is then to be placed in a distilling apparatus and distilled until about three-fourths of the oil has passed over. This is to be collected and separated from the water and kept in well-stoppered bottles protected from the light, and is to be dispensed whenever oil of turpentine is required for internal use. <U. S., p 290. F C F, p 651.

Sp. gr. 0.855 to 0.865 at N T. Boils at about 160°C. (320°F.), other characteristics the same as oil of turpentine. This was official in the G. P.

OLEUM THEOBROMATIS. Oil of Theobroma. OLEUM THEOBROMÆ, PHARM. 1880, BUTTER OF CACAO. "A fixed oil expressed from the seed of *Theobroma Cacao*." <U. S., p 290. F C F, p 640.

Note the change in the Latin title.

Sp. gr. 0.970 to 0.980 at N T. Readily soluble in ether or chloroform, also soluble in 100 parts of cold and in 20 parts of boiling absolute alcohol. A solid white or yellowish-white substance resembling tallow, brittle at N. T., melting at 30° to 33°C. (86° to 91.4°F.),to a clear liquid. Used for suppositories, and in soothing applications and ointments.

OLEUM THYMI. Oil of Thyme. "A volatile oil distilled from the leaves and flowering tops of *Thymus vulgaris*." <U. S., p 290. F C F, p 651.

Sp. gr. 0.900 to 0.930 at N T. Soluble in half its volume of alcohol, and in all proportions in carbon disulphide and glacial acetic acid.

OLEUM TIGLII. Croton Oil. "A fixed oil expressed from the seed of *Croton Tiglium*." <U. S., p 291. F C F, p 640.

This oil should be handled with caution, as it produces irritation and pustular eruption when in contact with the skin or mucous surfaces. Sp. gr. 0.940 to 0.960 at N T. Soluble, when fresh, in about 60 parts of alcohol, the solubility increasing by age; freely soluble in ether, chloroform, carbon disulphide and in fixed or volatile oils.

OPIUM. Opium. "The concrete milky exudation obtained by incising the unripe capsules of *Papaver Somniferum*, and yielding in its normal, moist condition, not less than 9 per cent. of crystallized morphine, when assayed by the official process." <U. S., p 292. F C F, p 664.

The process of assay is given in full in the Pharm., and consists in exhausting a given quantity of the opium by successive macerations with water, filtering the liquids, evaporating the filtrates obtained, from all but the first maceration, to a soft extract, and dissolving it in the liquid obtained from the first maceration. Alcohol and ether are then added, and then ammonia water and the solution set aside. The etherial layer is then separated. The residue is then washed with successive portions of ether, and finally the crystals of morphine are collected on a filter washed with water, and the quantity estimated. See the official process of assay in full.

OPII PULVIS. Powdered Opium. "Opium dried at a temperature not exceeding 85° C. (185° F.), and reduced to a very fine (No. 80) powder. Powdered opium, when assayed by the process given under opium, should not yield less than 13 nor more than 15 per cent. of crystallized morphine. Any powdered opium of higher percentage may be brought within these limits by admixture with powdered opium of a lower percentage in proper proportions." <U. S., p 291. F C F, p 664.

The former Pharm. directed that powdered opium should not contain less than 12, nor more than 16 per cent. of morphine, when assayed by the process given. All chemical manufacturing houses who furnish powdered opium now, put on the package the percentage of morphine which it contains.

OPIUM DEODORATUM. Deodorized Opium. OPIUM DENARCOTISATUM, PHARM. 1880. Powdered opium containing 13 to 15 per cent. of morphine 100 gm. (or 456 grains), ether 1400 Cc. (or 14 fl.ounces), sugar of milk, recently dried and in fine powder, a sufficient quantity to make 100 gm. (or 456 grains). The powdered opium is to be macerated with 700 Cc. (or 7 fl.ounces) of ether in a well-closed flask during 24 hours, agitating frequently. The clear etherial solution is then to be poured off and the maceration repeated with 350 Cc. (or 3½ fl.ounces) of ether for 12 hours as before. The liquid is then to be poured off and the remaining ether added and macerated as before, for 2 hours, and poured off. The residue is then to be collected in a weighed dish and dried by very gentle heat at first and finally at a temperature not exceeding 85° C. (185° F.), and then to be mixed with enough sugar of milk to make the weight of the product 100 gm. (or 456 grains).

The change of title of this preparation will be noted. It has the same percentage of morphine as the powdered opium from which it was prepared, but is freed from the noxious constituents, soluble in ether, that are found in opium.

PANCREATINUM. Pancreatin. *new.* "A mixture of the enzymes, naturally existing in the pancreas of warm-blooded animals, usually obtained from the fresh pancreas of the hog (*Sus scrofa*)." <U. S., p 293. F C F, p 667.

Insoluble in alcohol, but slowly and almost completely soluble in water. It digests albuminoids and converts starch into sugar; acids impair its usefulness.

PARALDEHYDUM. Paraldehyde. $C_6H_{12}O_3$. *new.* "A polymeric form of ethylic aldehyde (C_2H_4O)." <U. S., p 294. F C F, p 97.

Soluble in 8.5 parts of water at N T., and in 16.5 parts boiling water; miscible in all proportions in alcohol, ether and oils at about 0°C. (32°F), it solidifies to a crystalline mass which becomes liquid again at 10.5°C. (51°F.). It boils at 123°-125°C. (253.4°F.). It has been considerably used as a hypnotic in doses of ½ to 1 fl.drachm.

PEPSINUM. Pepsin. "A proteolytic ferment or enzyme obtained from the glandular layer of fresh stomachs from healthy pigs, and capable of digesting not less than 3000 times its own weight of coagulated and disintegrated egg albumen, when tested by the process given below." *new.* <U. S., p 295. F C F, p 668

The former Pharm. recognized only saccharated pepsin which was designed to

be $\frac{1}{10}$ the digestive power of the present pepsin. Pepsin is soluble for the most part in about 100 parts of water, but is more soluble if the water is slightly acidulated with hydrochloric acid. It is rendered inert in its solutions if heated to 100°C. (212°F.), but in a dry state is not injured by this temperature. The pepsins on the market vary considerably in their digestive power, from 1 to 2000 to 1 to 4000.

PEPSINUM SACCHARATUM. Saccharated Pepsin. The present formula directs pepsin as above 10 gm. (or 1 ounce), sugar of milk 90 gm. (or 9 ounces). The ingredients are to be triturated together in a mortar to a fine uniform mixture.

Saccharated pepsin should digest 300 times its weight of freshly coagulated and disintegrated egg albumen. Great improvement has been made during the past 10 years in pepsin, and reliable pepsins, which will fill the digestive test required, are now readily obtained.

PETROLATUM LIQUIDUM. Liquid Petrolatum. *new.* "A mixture of hydrocarbons, chiefly of the marsh-gas series, obtained by distilling off the lighter and more volatile portions from petroleum, and purifying the residue when it has the desired consistence." <U. S., p 296. F C F, 654.

This is a colorless, or slightly yellowish-colored oil, without taste or odor, making a good base for oil liniments. Its sp. gr. is about 0.875 to 0.945 at N T. It is insoluble in alcohol or water, but readily soluble in ether, oil of turpentine, benzin, benzol, and oils generally.

PETROLATUM MOLLE. Soft Petroleum. Petrolatum, Pharm. 1880. Soft Petroleum Ointment. "A mixture of hydrocarbons, chiefly of the marsh-gas series, obtained by distilling off the lighter and more volatile portions from petroleum, and purifying the residue when it has the desired melting point." <U. S., p 297. F C F, p 672.

This is to be dispensed when petrolatum is prescribed or called for, unless otherwise specified. The Sp. gr. of liquified petrolatum molle at about 60°C. (140°F.), is 0.820 to 0.840. It should melt at from 40° to 45°C. (104° to 113°F.). This is much used as an ointment base. In the former revision varieties of petrolatum having melting points from 104° to 125°F. were included under the heading petrolatum, now those with lower melting points are classed as above, and with higher melting points as below.

PETROLATUM SPISSUM. Hard Petrolatum. Petrolatum, Pharm. 1880. Hard Petroleum Ointment. "A mixture of hydrocarbons, chiefly of the marsh-gas series, obtained by distilling off the lighter and more volatile portions from petroleum, and purifying the residue when it has the desired melting point." <U. S., p 297. F C F, p 672.

This is simply petrolatum with a higher melting point, that between 45° and 51°C. (113° to 125°F.). Its sp. gr. is about the same as the soft petrolatum. If

required, it may be readily made from soft petrolatum by melting with it 10 per cent of paraffin.

PHOSPHORUS. Phosphorus. P. "Phosphorus should be carefully kept under water in strong, well-closed vessels, in a secure and moderately cool place protected from light." <U. S., p 297. F C F, p 673.

The sp. gr. of phosphorus is 1.830 at 10°C. (50°F.). Its melting point is 44°C. (111.2°F.). It is insoluble in water; soluble in 350 parts of absolute alcohol at N T. in 240 parts of boiling absolute alcohol, in 80 parts of absolute ether, and in about 50 parts of any fatty oil. It is quite soluble in chloroform, and in carbon disulphide, but its solution in the latter, must be handled with extreme caution to prevent its ignition.

PHYSOSTIGMINÆ SALICYLAS. Physostigmine Salicylate. $C_{15}H_{21}N_3O_2C_7H_6O$. "The salicylate of an alkoloid obtained from Physostigma." <U. S., p 298. F C F, p 123.

Soluble in 150 parts of water, and in 12 parts of alcohol at N T. It melts at 179°C. (354.2°F.). The dose is from $\frac{1}{120}$ to $\frac{1}{50}$ grain; also used locally in ophthalmic practice.

PHYSOSTIGMINÆ SULPHAS. Physostigmine Sulphate. ESERINE SULPHATE. $C_{15}H_{21}N_3O_2H_2SO_4$. "The sulphate of an alkaloid obtained from Physostigma." <U. S., p 299. *new.*

This new official has probably been introduced because of its greater solubility than the foregoing. It is very soluble in water or alcohol. It melts at 105°C. (221°F.). This is chiefly used in veterinary practice by subcutaneous injection, for colic and lockjaw.

PICROTOXINUM. Picrotoxin. $C_{30}H_{34}O_{13}$. "A neutral principle obtained from the seed of *Anamirta poniculata.*" <U. S., p 300. F C F, p 675.

The chemical formula of this preparation was given in the sixth revision as $C_9H_{10}O_4$. It is soluble in 240 parts of water and in 9 parts of alcohol at N T. It melts at 200°C. (392°F.), forming a yellow liquid. The dose is from $\frac{1}{100}$ to $\frac{1}{50}$ grain, as an antispasmodic and nerve tonic.

PILOCARPINÆ HYDROCHLORAS. Pilocarpine Hydrochlorate. $C_{11}H_{16}N_2O_2HCl$. "The hydrochlorate of an alkaloid obtained from Pilocarpus." <U. S., p 300. F C F, p 124.

This salt is very soluble in water and in alcohol, almost insoluble in ether and chloroform. It melts at 197°C. (386.6°F.). It is much used in connection with other remedies, in the treatment of drunkenness at the institutes established for that purpose. It is given usually by hypodermic injection, the dose being $\frac{1}{16}$ to $\frac{1}{4}$ grain or more.

PILULÆ. Pills. In the present Pharm two pill formulas are added. *Pilulæ Catharticæ Vegetabiles* and *Pilulæ Ferri Carbonatis,* and two dismissed, *Pilulæ Ferri Compositæ and Pilulæ Galbani comp.* Nearly all of those which remain are somewhat changed in the proportion of their ingredients and we have thought it

best, when there was a difference, to compare the 1880 formulas with the present revision, so that the difference may be seen at a glance. A large number of formulas for pills will be found in Fenner's Complete Formulary; those which are official, only, are given here.

PILULÆ ALOES. Pills of Aloes. Purified aloes in fine powder 13 gm, (or 200 grains), soap in fine powder 13 gm. (or 200 grains), water a sufficient quantity to make 100 pills. The aloes and soap are to be beaten together with a little water so as to form a mass which is to be divided into 100 pills. <U. S, p 301. F C F, p 683.

PILULÆ ALOES ET ASAFŒTIDA. Pills of Aloes and Asafetida.

	1880.	1890.
Purified aloes,	400 grains (or 26 gm)	9 gm. (or 139 grains).
Asafetida,	400 grains (or 26 gm.)	9 gm. (or 139 grains).
Soap,	400 grains (or 26 gm.)	9 gm. (or 139 grains).
Water, a sufficient quantity to make	300 pills.	to make 100 pills.

The solids are to be beaten together with a little water so as to form a mass which is to be divided into pills as directed. <U. S., p 301. F C F, p 683.

PILULÆ ALOES ET FERRI. Pills of Aloes and Iron.

	1880.	1890.
Purified aloes,	100 grains (or 6.50 gm.)	7 gm. (or 108 grains).
Dried sulphate of iron,	100 grains (or 6.50 gm.)	7 gm. (or 108 grains).
Aromatic powder,	100 grains (or 6.50 gm.)	7 gm. (or 108 grains).
Confection of rose, sufficient to make	100 pills.	to make 100 pills.

Beat the powders together with confection of rose so as to make a mass which is to be divided into 100 pills. <U. S., p 302. F C F, p 683.

PILULÆ ALOES ET MASTICHES. Pills of Aloes and Mastich.

	1880.	1890.
Purified aloes,	200 grains (or 13.00 gm.)	13 gm. (or 200 grains).
Mastich,	50 grains (or 3.25 gm.)	4 gm. (or 62 grains).
Red rose	50 grains (or 3.25 gm.)	3 gm. (or 46 grains).
Water, enough to make	100 pills.	to make 100 pills.

The powders are to be beaten together with the water to make a mass which is to be divided into 100 pills. <U. S., p 302. F C F, p 683.

PILULÆ ALOES ET MYRRHÆ. Pills of Aloes and Myrrh.

	1880.	1890.
Purified aloes,	200 grains (or 13.00 gm.)	13 gm. (or 200 grains).
Myrrh,	100 grains (or 6.50 gm.)	6 gm. (or 92 grains).
Aromatic powder,	50 grains (or 3.25 gm.)	4 gm. (or 62 grains).
Syrup, enough to make.	100 pills.	to make 100 pills.

The powders are to be beaten together with a little syrup to make a mass which is to be divided into 100 pills. <U. S., p 302. F C F, p 683.

PILULÆ ANTIMONII COMPOSITÆ. Compound Pills of Antimony. PLUMMER'S PILLS.

	1880.	1890.
Sulphurated antimony,	50 grains (or 3.25 gm.)	4 gm. (or 62 grains).
Mild mercurous chloride,	50 grains (or 3.25 gm.)	4 gm. (or 62 grains).
Guaiac,	100 grains (or 6.50 gm.)	8 gm. (or 123 grains).
(1880) Mucilage of tragacanth to make	100 pills.	
(1890) Castor oil.		to make 100 pills.

The powders are to be mixed together and made into a mass with the excipient directed, which is to be divided into 100 pills. <U. S., p 302. F C F, p 685.

PILULÆ ASAFŒTIDÆ. Pills of Asafetida.

	1880.	1890.
Asafetida,	300 grains (or 19.50 gm.)	20 gm. (or 308 grains).
Soap,	100 grains (or 6.50 gm.)	6 gm. (or 93 grains).
Water, enough to make	100 pills.	to make 100 pills.

The powders are to be beaten together with a little water into a mass which is to be divided into 100 pills. <U. S., p 303. F C F, p 684.

PILULÆ CATHARTICÆ COMPOSITÆ. Compound Cathartic Pills.

	1880.	1890.
Compound extract of colocynth,	130 grains (or 8.40 gm.)	8 gm. (or 123 grains).
Mild mercurous chloride	100 grains (or 6.50 gm.)	6 gm. (or 92 grains).
Gamboge.	25 grains (or 1.60 gm.)	1½ gm. (or 23 grains).
(1880) Abstract of jalap,	100 grains (or 6.50 gm.)	
(1890) Extract of jalap.		3 gm. (or 46 grains).
Water, enough to make	100 pills.	to make 100 pills.

The powders are to be intimately mixed and gradually incorporated with the extract of jalap and enough water to make a mass which is to be divided into 100 pills.

PILULÆ CATHARTICÆ VEGETABILES. Vegetable Cathartic Pills. *new.*

Compound extract of colocynth,	60 gm. (or 925 grains).
Extract of hyoscyamus,	30 gm. (or 463 grains).
Extract of jalap,	30 gm. (or 463 grains).
Extract of leptandra,	15 gm. (or 231 grains).
Resin of podophyllum,	15 gm. (or 231 grains).
Oil of peppermint,	8 Cc. (or 2 fl.drachms).
Water, a sufficient quantity to make	100 pills.

The compound extract of colocynth is to be mixed intimately with the resin of podophyllum and incorporated with the oil of peppermint. The remaining extracts are to be mixed with enough water to render them plastic and mixed by beating together with the mixture first prepared, and with water, into a mass which is to be divided into 1000 pills. <U S., p 303. F C F, p 686.

PILULÆ FERRI CARBONATIS. Pills of Carbonate of Iron. Ferruginous Pills. Chalybeate Pills. Blaud's Pills. *new.*

Ferrous sulphate, in clear crystals,	16 gm. (or 247 grains).
Potassium carbonate,	8 gm. (or 123 grains).
Sugar,	4 gm. (or 62 grains).
Tragacanth, in fine powder,	1 gm (or 15 grains).
Althæa, in No. 60 powder,	1 gm. (or 15 grains).
Glycerin and water, each sufficient to make	100 pills.

The carbonate of potassium is to be rubbed in a mortar with about 10 drops each of glycerin and water and the ferrous sulphate and sugar, previously triturated together to a fine powder, added and the whole beaten together until it assumes a greenish color. When the reaction appears to have terminated, the tragacanth and althæa are to be incorporated, with enough water if necessary, to make a mass of pilular consistence, which is to be divided into 100 pills. They should be freshly made when wanted. <U. S., p 304.

PILULÆ FERRI IODIDI. Pills of Ferrous Iodide.

	1880.	1890.
Reduced iron,	60 grains (or 4.00 gm.)	4 gm. (or 62 grains).
Iodine,	80 grains (or 5.20 gm.)	5 gm. (or 77 grains).
Glycyrrhiza,	50 grains (or 3.25 gm.)	4 gm. (or 62 grains).
Sugar,	50 grains (or 3.25 gm.)	4 gm. (or 62 grains)
Extract of glycyrrhiza,	12 grains (or 0.75 gm.)	1 gm. (or 15 grains).
Acacia,	12 grains (or 0.75 gm.)	1 gm. (or 15 grains).
Water, balsam of tolu and ether, of each a sufficient quantity to make.	100 pills.	to make 100 pills.

The reduced iron is to be put in a small mortar with 6 Cc. (or 2 fl.drachms) of water and the iodine gradually added, constantly

triturating until the mixture ceases to have a reddish tint. The remaining powders are then to be added and well mixed. The mass is then to be transferred to a porcelain capsule and the excess of moisture evaporated by the heat of a water-bath, with constant stirring, until the mass has acquired a pilular consistence when it is to be divided into 100 pills. The pills are then to be coated or varnished with a solution of 10 gm. (or 150 grains) of balsam of tolu, in 15 Cc. (or ½ fl.ounce) of ether, and dried. <U. S., p 305. F C F, p 689.

PILULÆ OPII. Pills of Opium.

	1880.	1890.
Powdered opium,	100 grains (or 6.50 gm.)	6.5 gm. (or 100 grains).
Soap,	25 grains (or 1.62 gm.)	2.0 gm. (or 31 grains).
Water, a sufficient quantity to make.	100 pills.	to make 100 pills.

The powders are to be beaten together with water so as to form a mass which is to be divided into 100 pills. <U. S., p 305. F C F, p 690.

PILULÆ PHOSPHORI. Pills of Phosphorus. The formula of the 1880 and the present revision differ only in the proportion of inert ingredients therefore only the latter is given.

Phosphorus, *six centigrammes*,	0.06 gm. (or 1 grain).
Althæa, in No. 60 powder,	6.00 gm. (or 93 grains).
Acacia, in fine powder,	6.00 gm. (or 93 grains).
Water, glycerin, chloroform, balsam of tolu and ether, of each a sufficient quantity to make.	100 pills.

The phosphorus is to be dissolved in a test tube with 5 Cc. (or 81 minims) of chloroform with the aid of a very gentle heat, replacing from time to time any chloroform which may have been lost by evaporation. The acacia and althæa are to be mixed in a mortar and the solution of phosphorus added, then, immediately afterwards a sufficient quantity, about 4 Cc. (or 65 minims) of a mixture of 2 volumes of glycerin, with 1 volume of water, and a mass quickly formed which is to be divided into 100 pills. The pills are then to be coated or varnished with a solution of 10 gm. (or 150 grains) of balsam of tolu in 15 Cc. (or ½ fl.ounce) of ether, and dried. <U. S., p 306. F C F, p 690.

PILULÆ RHEI. Pills of Rhubarb.

	1880.	1890.
Rhubarb powd.,	300 grains (or 19.50 gm.)	20 gm. (or 308 grains).
Soap, powd.,	100 grains (or 6.50 gm.)	6 gm. (or 93 grains).
Water, a sufficient quantity to make	100 pills.	to make 100 pills.

The powders are to be mixed and beat with water so as to form a mass, which is to be divided into 100 pills. <U. S., p 306. F C F, p 692.

PILULÆ RHEI COMPOSITÆ. Compound Pills of Rhubarb.

	1880.	1880.
Rhubarb, powd.,	200 grains (or 13.00 gm.)	13 gm. (or 200 grains).
Purified aloes,	150 grains (or 9.75 gm.)	10 gm. (or 154 grains).
Myrrh,	100 grains (or 6.50 gm.)	6 gm. (or 93 grains).
Oil of peppermint	10 grains (or 0.65 gm.)	0.5 Cc. (or 8 minims).
Water. a sufficient quantity to make	100 pills.	to make 100 pills.

The oil of peppermint is to be mixed with the powders and the mixture beaten with water so as to form a mass, which is to be divided into 100 pills. <U. S., p 256. F C F, p 692.

PIPERINUM. Piperin. $C_{17}H_{10}NO_3$. "A neutral principle obtained from pepper, and obtainable also from other plants of the natural order *Piperaceæ*." <U. S., p 307.

The former Pharm. describes piperina or piperine as "A proximate principle of feebly alkaloidal power prepared from pepper, etc". It is obtained as a by-product of the manufacture of oleoresin of pepper, which see. It is almost insoluble in water, but soluble in 30 parts of alcohol at N T.; only slightly soluble in ether. It melts at 130°C. (226°F.).

PIX BURGUNDICA. Burgundy Pitch. "The prepared resinous exudation of *Abies excelsa*." <U. S., p 307. F C F, p 694.

Somewhat soluble in cold alcohol, and almost entirely soluble in boiling alcohol, and in hot acetic acid. It softens in warm weather.

PIX CANADENSIS. Canada Pitch. Hemlock Pitch, which was official in the former revision is now dismissed.

PIX LIQUIDA. Tar. "An empyreumatic oleoresin obtained by the destructive distillation of the wood of *Pinus palustris* and of other species of *Pinus*." <U. S., p 308. F C F, p 694.

It is slightly soluble in water, soluble in alcohol aud oils, solution of potassium or sodium hydrate.

PLUMBI ACETAS. Lead Acetate. Sugar of Lead. $Pb(C_2H_3O_2)_2+3H_2O$.

This salt is soluble at N T. in 2.3 parts of water and in 21 parts of alcohol; in 0.5 part of boiling water and in 1 part of boiling alcohol. When heated to 40 C. (104°F.), it loses its water of crystallization (14.25 per cent.). It fuses at 200 C. (392 F.), with loss of acetic acid. <U. S., p 408. F C F, p 696.

PLUMBI CARBONAS. Lead Carbonate. White Lead. $(PbCO_3)_2Pb(OH)_2$.

This salt is insoluble in water or alcohol, but is soluble in dilute nitric acid or in acetic acid, with evolution of CO_2. <U. S., p 309. F C F, p 696.

PLUMBI IODIDUM. Lead Iodide. PbI_2.

Soluble in 2000 parts of water at N T., and in about 200 parts of boiling water; almost insoluble in alcohol. <U. S., p 309. F C F, 697.

PLUMBI NITRAS. Lead Nitrate. $Pb(NO_3)_2$.

Soluble in 2 parts of water at N T., almost insoluble in alcohol. In boiling water it is soluble in 0.75 part. <U. S., p 310. F C F, p 697.

PLUMBI OXIDUM. Lead Oxide. LITHARGE. PbO.

In water and alcohol this salt is almost insoluble, but in acetic acid or diluted nitric acid, it is soluble. <U. S., p 310. F C F, p 698.

POTASSA. Potassa. POTASSIUM HYDRATE. POTASSIUM HYDROXIDE, CAUSTIC POTASH. KOH.

Soluble in about 0.5 part of water, and in 2 parts of alcohol at N T. Very soluble in boiling water and in boiling alcohol. <U. S., p 311. F C F, p 700.

POTASSA CUM CALCE. Potassa with Lime. Potassa 500 gm. (or 1 ounce), lime 500 gm. (or 1 ounce). They are to be rubbed together in a warm iron mortar so as to form a powder, which should be kept in a well-stoppered bottle. <U. S., p 312 F C F, p 700.

This powder is deliquescent when exposed to moist air; it is very strongly alkaline, and is used as a caustic.

POTASSA SULPHURATA. Sulphurated Potassa. LIVER OF SULPHUR. Sublimed sulphur 100 gm. (or 1 ounce), potassium carbonate 200 gm. (or 2 ounces). The potassium carbonate is to be dried and powdered and mixed thoroughly with the sulphur and the mixture gradually heated in a covered crucible, which should only be abont half filled with it, until the mass ceases to foam and is in a state of perfect fusion. The fused mass is then to be poured out upon a cold marble slab and, when cold, broken into pieces and kept in a well-stoppered bottle.

This is soluble in 2 parts of water at N T., but in alcohol only the potassium sulphide dissolves out. The aqueous solution is strongly alkaline.

POTASSII ACETAS. Potassium Acetate. $KC_2H_3O_2$.

This salt rapidly deliquesces when exposed to the air. Soluble in 0.36 part of water and in 1.9 parts of alcohol at N T. <U. S., p 313. F C F, p 701.

POTASSII BICARBONAS. Potassium Bicarbonate. $KCHO_3$.

Soluble in 3.2 parts of water at N T.; nearly insoluble in alcohol, <U. S., p 314. F C F, p 701.

POTASSII BICHROMAS. Potassium Bichromate. POTASSIUM DICHROMATE. $K_2Cr_2O_7$.

Soluble in 10 parts of water at N T.; insoluble in alcohol. In boiling water it is soluble in 1.5 parts. <U. S., p 315. F C F, p 702.

POTASSII BITARTRAS. Potassium Bitartrate. CREAM OF TARTAR. $KHC_4H_4O_6$.

Soluble in about 201 parts of water at N T. and in 16.7 parts of boiling water; only slightly soluble in alcohol. <U. S., p 315. F C F, p 703.

POTASSIUM BROMIDUM. Potassium Bromide. KBr,

Soluble in ahout 1.6 parts of water and in 200 parts of alcohol at N T.; and in about 1 part of boiling water, and in 4 parts of glycerin at N T. <U. S., p 316. F C F, p 703.

POTASSII CARBONAS. Potassium Carbonate. SAL TARTAR. K_2CO_3.

It deliquesces rapidly when exposed to the air. Soluble in 1.1 parts of water at N T. and in about 0.65 part of boiling water, insoluble in alcohol. It is strongly alkaline, and combines with acids with evolution of CO_3. <U. S., p 317, F C F, p 704.

POTASSII CHLORAS. Potassium Chlorate. $KClO_3$.

The Pharm. directs caution in handling and mixing potassium chlorate on account of the liability of explosions when mixed with certain organic matter, as cork tannic acid, sugar, etc., or with sulphur, antimony sulphide, phosphorus ro other easily oxidizable substance; care should also be taken in heating it, or in pounding it in a mortar with other substances.

Soluble in 16.7 parts of water at N T., and in 1.7 parts of boiling water, insoluble in alcohol. It fuses at 234°C. (453°F.) and above 352°C. (665.6°F) it is decomposed into oxygen and potassium perchlorate; above 400°C. (752°F.) it parts with all of its oxygen, amounting to nearly 40 per cent. <U. S., p 318. F C F, p 704.

POTASSII CITRAS. Potassium Citrate. $K_3C_6H_5O_7+H_2O$.

Soluble at N T. in 0.6 part of water, and very soluble in boiling water; but slightly soluble in alcohol. <U. S., p 318. F C F. p 705.

POTASSII CITRAS EFFERVESCENS. Effervescent Potassium Citrate. *new.* Citric acid 63 gm. (or 2 ounces av. + 96 grains), potassium bicarbonate 90 gm. (or 3 ounces av. + 76 grains), sugar 47 gm. (or 1 ounce av. + 285 grains). The ingredients are to be powdered separately and thoroughly mixed in a warm mortar. The pasty mass is then to be dried rapidly at a temperature not exceeding 120° C (248° F.), and when perfectly dry it is to be powdered and kept in well-stoppered bottles. <U. S., p 319.

A teaspoonful or more of this powder is to be put in part of a glass of water, and drunk during effervescence. It should not be too finely powdered.

POTASSII CYANIDUM. Potassium Cyanide. KCN.

Soluble in about 2 parts of water at N T., and in about its own weight of boiling water; almost insoluble in alcohol. It is strongly alkaline. <U. S., p 320. F C F, p 705.

POTASSII ET SODII TARTRAS. Potassium and Sodium Tartrate. ROCHELLE SALT. $KNaC_4H_4O_6+4H_2O$.

Soluble in 1.4 parts of water at N T., and in less than its own weight of boiling water; nearly insoluble in alcohol. <U. S., p 320. F C F, p 706.

POTASSII FERROCYANIDUM. Potassium Ferrocyanide. YELLOW PRUSSIATE OF POTASH. $K_4Fe(CN)_6+3H_2O$.

Soluble in 4 parts of water at N T., and in 2 parts of boiling water; insoluble in alcohol. <U. S., p 321. F C F, p 706.

POTASSII HYPOPHOSPHIS. Potassium Hypophosphite. KPH_2O_2.

This salt is very deliquescent. It is soluble in 0.6 part of water, and in 7.3 parts of alcohol at N T. <U. S., p 323. F C F, p 707.

POTASSII IODIDUM. Potassium Iodide. KI.

In moist air this salt is slightly deliquescent. It is soluble in 0.75 part of water and in 18 parts of alcohol at N T., also in 2.5 parts of glycerin. It is incompatable with cinchona alkaloids and their salts. <U. S., p 322. F C F, p 707.

POTASSII NITRAS. Potassium Nitrate. SALTPETRE. KNO_3.

Soluble in 3.8 parts of water at N T., and 0.4 part of boiling water; but slightly soluble in alcohol. When heated to 353°C. (667.4°F.), it melts, and may be cast into balls known as *sal prunelle*. <U. S., p 323. F C F, p 708.

POTASSII PERMANGANAS. Potassium Permanganate. $KMnO_4$.

This salt should be kept in glass-stoppered bottles protected from the light, and should not be brought in contact with organic or readily oxidizable substances.

It is soluble in 16 parts of water at N T., and in 3 parts of boiling water. It is decomposed by alcohol. When heated to 240°C. (464°F.), it is decomposed with evolution of oxygen. It is usually prescribed internally in the form of pills, and externally its solution is a valuable antiseptic. <U. S., p 324. F C F, p 708.

POTASSII SULPHAS. Potassium Sulphate. K_2SO_4.

Soluble in about 9.5 parts of water at N T., and in 4 parts of boiling water; insoluble in alcohol. <U. S., p 325. F C F, p 709.

Potassii Sulphas, and **Potassii Tartras** which were official in the former revision, are now dismissed. <F C F, p 709, 710.

PULVERES. Powders. The formulas for powders in the new Pharm. are but little changed except the substitution of metric weight for parts. The proportion of glycyrrhiza is considerably increased in compound powder of glycyrrhiza, and the proportion of camphor slightly decreased in compound powder of morphine. For other powders, of which there are many. <F C F, p 713 to 720.

PULVIS ANTIMONIALIS. Antimonial Powder. JAMES'S POWDER. Antimony oxide 33 gm. (or 1 ounce), precipitated calcium phosphate 67 gm. (or 2 ounces). The powders are to be intimately mixed. <U. S., p 326. F C F, p 714.

PULVIS AROMATICUS. Aromatic Powder. Ceylon cinnamon in No. 60 powder 35 gm. (or 3½ ounces), cardamon deprived of the capsules and crushed 15 gm. (or 1½ ounces), nutmeg in

No. 20 powder 15 gm. (or 1½ ounces). The nutmeg and cardamom are to be triturated with a portion of the cinnamon until they are reduced to a fine powder, then the remainder of the cinnamon and the ginger are to be added and thoroughly mixed. <U. S., p 226. F C F, p 714.

PULVIS CRETÆ COMPOSITUS. Compound Chalk Powder. Prepared chalk 30 gm. (or 3 ounces), acacia in fine powder 20 gm. (or 2 ounces), sugar in fine powder 50 gm. (or 5 ounces). They are to be thoroughly mixed. <U. S., p 326. F C F, p 715.

PULVIS EFFERVESCENS COMPOSITUS. Compound Effervescing Powder. Seidlitz Powder. Sodium bicarbonate in fine powder 31 gm. (or 480 grains), potassium and sodium tartrate (Rochelle salt) 93 gm. (or 1440 grains) tartaric acid 27 gm. (or 420 grains). The bicarbonate of sodium and Rochelle salt are to be intimately mixed and the mixture divided into 12 equal parts which are to be wrapped separately in blue paper so as to make 12 powders. The tartaric acid is to be divided into 12 equal parts which are to be wrapped separately in white paper so as to make 12 powders, which should be wrapped in paraffin paper. One of each of the powders is known as a "seidlitz powder," they are to be dissolved separately, each, in about ¼ glass of water and the solutions poured together and drunk during effervescence. <U. S., p 327. F C F, p 715.

PULVIS GLYCYRRHIZÆ COMPOSITUM. Compound Powder of Glycyrrhiza. Compound Liquorice Powder. The formula of the present Pharm. is changed by increasing the proportion of glycyrrhiza nearly 50 per cent., and by using oil of fennel instead of the powdered seed. Senna in No. 80 powder 180 gm. (or 2¼ ounces), glycyrrhiza in No. 80 powder 236 gm. (or 3 ounces), washed sulphur 80 gm. (or 1 ounce), oil of fennel 4 gm. (or 12 minims), sugar in fine powder 500 gm. (or 6¼ ounces). The oil of fennel is to be thoroughly mixed with about one-half the sugar, the remainer of the sugar added and then the other powders, all to be thoroughly mixed and passed through a No. 60 sieve. <U. S., p 327. F C F, 716.

PULVIS IPECACUANHÆ ET OPII. Powder of Ipecac and Opium. Dover's Powder. Ipecac in No. 60 powder 10 gm. (or 1 ounce), powdered opium 10 gm. (or 1 ounce), sugar of milk in No. 30 powder 80 gm. (or 8 ounces). The powders are to be rubbed together and thoroughly mixed. <U. S., 327. F C F, p 717.

PULVIS JALAPÆ COMPOSITUS. Compound Powder of Jalap. PULVIS PURGANS. Jalap in No. 60 powder 35 gm. (or 3½ ounces), potassium bitartrate in fine powder 65 gm. (or 6½ ounces). The powders are to be rubbed together and thoroughly mixed. <U. S., p 328. F C F, p 717.

PULVIS MORPHINÆ COMPOSITUS. Compound Powder of Morphine. TULLY'S POWDER. Morphine sulphate 1 gm. (or 22 grains), camphor 19 gm. (or 416 grains), glycyrrhiza, in No. 60 powder, 20 gm. (or 1 ounce av.), precipitated calcium carbonate 20 gm. (or 1 ounce av.), alcohol a sufficient quantity. The camphor is to be rubbed in a mortar with a little alcohol in order to reduce it to a powder, and the other powders are to be gradually added and rubbed with it to a uniform powder. The morphine salt is first to be rubbed with a small portion of the powder and the remainder gradually added, mixing them thoroughly, and then the whole is to be passed through a No. 40 sieve. <U. S., p 328. F C F, p 718.

PULVIS RHEI COMPOSITUS. Compound Powder of Rhubarb. Rhubarb, in No. 60 powder, 25 gm. (or 2½ ounces), magnesia 65 gm. (or 6½ ounces),ginger, in No. 60 powder, 10 gm. (or 1 ounce). The powders are to be rubbed together and thoroughly mixed. <U. S., p 328. F C F, p 718.

This is also known as Gregory's powder.

PYROGALLOL. Pyrogallol. PYROGALLIC ACID. $C_6H_3(OH)_3$. *new.*

This is newly introduced as an official preparation, but has been known under the latter title for some time. Soluble at N T. in 1.7 parts of water, and in 1 part of alcohol, also in 1.2 parts of ether. It melts at 131°C. (267.8°F.) and may be sublimed unchanged. <U. S., p 329. F C F, p 57, 873.

PYROXYLINUM. Pyroxylin. SOLUBLE GUN COTTON. COLLOXYLIN. Purified cotton 100 gm. (or 3 ounces av. + 230 grains), nitric acid 1400 Cc. (or 47.34 fl.ounces), sulphuric acid 2200 Cc. (or 74.39 fl.ounces), alcohol, ether, and water, each, a sufficient quantity. The acids are to be mixed gradually in a glass or porcelain vessel and when the temperature has fallen to 32° C. (90° F.), the purified cotton is to be added. The cotton is to be placed in the mixture and stirred with a glass rod until it is thoroughly saturated, and then allowed to macerate until, when a sample is taken out and thoroughly washed with a large quantity of water and then with alcohol and pressed, it is found to be soluble in a mixture of 1 volume of alcohol with 3 volumes of ether.

The cotton is then to be removed from the acid mixture and washed, first with cold water until the washings no longer have an acid taste, and then with boiling water until the washings cease to redden blue litmus paper. The pyroxylin is then to be drained on filtering paper and dried, in small detached pellets, by means of a water-bath, at a temperature not exceeding 60° C. (140° F.). It should be kept loosely packed in tin cans of small capacity, remote from lights or fire. <U. S., p 330. F C F, p 721.

QUINIDINÆ SULPHAS. Quinidine Sulphate. $(C_{20}H_{24}N_2O_2)_2 H_2SO_4+2H_2O$. "The neutral sulphate of an alkaloid obtained from the bark or several species of cinchona." <U. S., p 331. F C F, p 125.

Soluble in 100 parts of water and in 8 parts of alcohol at N T, also soluble in 14 parts of chloroform, but almost insoluble in ether.

QUININA. Quinine. $C_{20}H_{24}N_2O_2+3H_2O$. "An alkaloid obtained from the bark of various species of cinchona." <U. S., p 331. F C F, p 125.

"Quinine" is often called for when its salts (particularly the sulphate) are wanted, therefore care should be exercised in dispensing, that the customer may get what is wanted. It may be remarked that the majority of druggists do not keep the alkaloid quinine in stock as it is only occasionally used.

Soluble in 1670 parts of water and in 6 parts of alcohol at N T; in 700 parts of boiling water, and in 2 parts of boiling alcohol. It is also soluble in 23 parts of ether, 5 parts of chloroform, or 200 parts of glycerin.

QUININÆ BISULPHAS. Quinine Bisulphate. $C_{20}H_{24}N_2O_2H_2 SO_4+7H_2O$.

This is the most soluble salt of quinine and is therefore used for many purposes requiring a readily soluble salt, as for hypodermic injection, solutions, elixirs, etc. It is soluble in 10 parts of water and in 32 parts of alcohol at N T. When heated to 100° C. (212° F.) it loses all its water of crystallization, (nearly 23 per cent.). <U. S., p 332. F C F, p 126.

QUININÆ HYDROBROMAS. Quinine Hydrobromate. $C_{20}H_{24} N_2O_2HBr+H_2O$.

Soluble in 54 parts of water and in 0.6 parts of alcohol, also in 6 parts of ether and 12 parts of chloroform. It will be noted that this is the most soluble salt of quinine in alcohol; it is therefore chosen when a concentrated alcoholic solution of a quinine salt is required.

At 100° C. (212° F.) it loses its water of crystallization (about 4.25 per cent.). <U. S., p 333. F C F, p 126.

QUININÆ HYDROCHLORAS. Quinine Hydrochlorate. $C_{20} H_{24}N_2O_2HCl+2H_2O$.

Next to the sulphate of quinine this is now the most used of the quinine salts, and because of its greater solubility it is generally preferred, by those who become accustomed to its use.

Soluble in 34 parts of water and in 3 parts of alcohol at N T, also soluble in 9 parts of chloroform. At 120° C. (248° F.) it loses its water of crystallization. <U. S., p 334. F C F, p 126.

QUININÆ SULPHAS. Quinine Sulphate. $(C_{20}H_{24}N_2O_2)_2H_2SO_4+7H_2O$.

In this country this is the most used of any alkaloidal salt. It is soluble in 740 parts of water and in 65 parts of alcohol at N T; and in 30 parts of boiling water or 3 parts of boiling alcohol, also in 40 parts of glycerin, and in about 680 parts of chloroform. When exposed for some hours to a heat of 50° to 60° C. (122° to 140° F.), it loses most of its water of crystallization. <U. S., p 334. F C F, p 127

QUININÆ VALERIANAS. Quinine Valerianate. $C_{20}H_{24}N_2O_2C_5H_{10}O_2+H_2O$.

Soluble in 100 parts of water and in 5 parts of alcohol at N T. At about 90° C. (144° F.) it melts to a colorless liquid, and at 100° C. (212° F.) it loses its water of crystallization and begins to lose valerianic acid. <U. S., p 335. F C F, p 129.

RESINA. Resin. COLOPHONY. "The residue left after distilling off the volatile oil from Turpentine." <U. S., p 336. F C F, p 722.

This is commonly known as resin or "rosin." Its sp. gr. 1.070 to 1.080. It is more or less soluble in alcohol, ether and oils, also in solution of potassium or sodium hydrate. It softens by heat, and melts to a thick viscid liquid at about 135°C.

RESINA COPAIBÆ. Resin of Copaiba. "The residue left after distilling off the volatile oil from copaiba." <U. S., p 336. F C F, p 723.

Soluble more or less in alcohol, ether, chloroform, carbon disulphide, benzol, benzin. amylic alcohol or oils. It softens by heat and melts to a thick viscid liquid at about 130°C.

RESINA JALAPÆ. Resin of Jalap. Jalap, in No. 60 powder, 1000 gm. (or 1 pound), alcohol and water, each, a sufficient quantity. The powder is to be moistened with 300 Cc. (or 5 ounces) of alcohol and packed firmly in a cylindrical percolator; enough alcohol is to be poured upon it to saturate the powder and leave a stratum above, and after 24 hours it is to be percolated, gradually adding alcohol until 2500 Cc. (or 2½ pints) of tincture are obtained. The alcohol is then to be distilled off until the tincture is reduced to 400 Cc. (or 6½ ounces), and this residue is to be added, with constant stirring, to 9000 Cc. (or 9 pints) of water. The precipitate is then allowed to subside the supernatant liquid drawn off, and the precipitate washed twice with fresh portions of water. It is then to be placed upon a strainer, drained and pressed, and the resin dried with a gentle heat, stirring occasionally until the moisture has evaporated. <U. S., p 336. F C F, p 723.

Soluble in all proportions in alcohol, but insoluble in most other media, and not more than 10 per cent. soluble in ether.

RESINA PODOPHYLLI. Resin of Podophyllum. Podophyllum, in No. 60 powder, 1000 gm. (or 1 pound av.), hydrochloric acid 10 Cc. (or 75 minims), alcohol and water, each, a sufficient quantity. The powder is to be percolated in the usual manner with alcohol until the drug is exhausted. The alcohol is then to be distilled off until the residue is reduced to a syrupy consistence, and this is to be poured slowly, and with constant stirring, into 1000 Cc. (or 1 pint) of cold water, to which the hydrochloric acid has been added. The supernatant liquid is to be poured off from the precipitate after it has subsided and it is to be washed twice with portions of fresh water. The precipitate is then to be spread in a thin layer on a strainer, drained and dried by exposure to the air, occasionally breaking up the cake while it is drying and finally powdering it in a mortar. <U. S., p 337. F C F, p 723.

Soluble in alcohol in all proportions, and in ether to the extent of 15 to 20 per cent. It is soluble in boiling water to the extent of 80 per cent. but most of it is again deposited on cooling.

RESINA SCAMMONII. Resin of Scammony. Scammony, in No. 60 powder, 1000 gm. (or 1 pound av.), alcohol and water, each, a sufficient quantity. The scammony is to be digested with successive portions of boiling alcohol until it is exhausted. The tinctures are then to be mixed and evaporated to a syrupy consistence by distilling off the alcohol. The residue is then to be added in a thin stream, with constant stirring, to 2500 Cc. (or 2½ pints) of water, and the precipitate which forms washed thoroughly, and dried by a gentle heat. <U. S., p 338. F C F, p 724.

Soluble in alcohol in all proportions, also wholly soluble in ether and oil of turpentine. It is also soluble in solutions of the alkalies by the aid of heat,

RESORCINUM. Resorcin. Resorcinol Metadioxybenzol. "A diatomic phenol." $C_6H_4(OH)_2$. *new.* <U. S., p 339. F C F, p 728.

Soluble in 0.6 part of water and in 0.5 part of alcohol; also readily soluble in ether and glycerin and very slightly soluble in chloroform. It melts at about 119° C. (246.2°F.).

It is given internally as an antiseptic in fevers, cholera and enteric diseases, and in sea sickness, gastritis, cholera infantum, etc., in doses of 1 to 2 grains. In asthma as high as 15 grains have been given. In diphtheria, a 10 per cent. glycerol of resorcin has been applied to the mucous membrane of the throat with good results; and solutions and ointments are used externally for sores, ulcers and skin diseases.

SACCHARUM. Sugar. CANE SUGAR. $C_{12}H_{22}O_{11}$. "The refined sugar obtained from *Saccharum officinarum* and from various species or varieties of *sorghum*, also from one or more varieties of *Beta vulgaris*." <U. S., p 342. F C F, 734.

Soluble in 0.5 part of water and in 175 parts of alcohol at N T., in 0.2 part of boiling water and in 28 parts of boiling alcohol. Insoluble in ether and chloroform. The saturated, aqueous solution of sugar (syrup) at N T. has sp. gr. 1.345.

SACCHARUM LACTIS. Sugar of Milk. $C_{12}H_{22}O_{11}+H_2O$. "A peculiar crystalline sugar obtained from the whey of cow's milk by evaporation, and purified by recrystallization." <U. S., p 342. F C F, p 542, 735.

Soluble in about 6 parts of water at N T. and in about 1 part of boiling water; insoluble in alcohol, ether and chloroform. On account of the peculiar hardness, grittiness and permanance of this sugar, it is much used for making triturations, or for mixing as an inert dilutent in powders, etc.

SALICINUM. Salicin. $C_{13}H_{18}O_7$. "A neutral principle obtained from several species of *Salix* and *Populus*." <U. S., p 343 F C F, p 736.

Soluble in 28 parts of water, and in 30 parts of alcohol at N T.; in 0.7 part of boiling water and in 2 parts of boiling alcohol. Almost insoluble in ether and chloroform. It melts at 198°C. (388.4°F.), forming a clear liquid.

SALOL. Salol. PHENYL SALICYLATE. $C_6H_5C_7H_5O_3$. "The salicylic ether of phenol." *new.* <U. S., p 343. F C F, p 737.

This new official is a white crystalline powder, without odor, and nearly tasteless. It is almost insoluble in water, soluble in 10 parts of alcohol at N T., and in 0.3 part of ether; also readily soluble in chloroform and oils. It melts at 42° 43°C. (107.6°–109.4°F.).

It is employed in the treatment of rheumatism, fevers and internal catarrhal conditions in doses of from 5 to 20 grains. Externally it is used as a dusting powder for eruptions and in the form of ointment as an antiseptic dressing.

SANTONINUM. Santonin. $C_{15}H_{18}O_3$. "A neutral principle obtained from Santonica." <U. S., p 345. F C F, p 737.

This is a well known, and much used remedy for worms. It is nearly insoluble in cold water, soluble in 40 parts of alcohol at N T., in 140 parts of ether, and 4 parts of chloroform. It melts at 170°C. (338°F.). It is usually given in the form of powders or in a confection; or in lozenges, in doses of ½ to 2 grains.

SAPO. Soap. WHITE CASTILE SOAP. "Soap prepared from soda and olive oil." <U. S., p 346. F C F, p 740.

Soluble in water and in alcohol, more readily by the aid of heat.

SAPO MOLLIS. Soft Soap. SAPO VIRIDIS, PHARM. 1880. GREEN SOAP. Linseed oil 400 gm. (or 40 ounces), potassa 90 gm. (or 9 ounces), alcohol 40 Cc. (or 4 fl.ounces), water a sufficient quantity. The linseed oil is to be heated in a deep, capacious

vessel on a water-bath or steam-bath, to a temperature of about 60° C. (140° F.). The potassa is to be dissolved in 450 Cc. (or 45 ounces) of water, and to this solution the alcohol is added, and this mixture is gradually added to the oil, continuing the heat until a small portion is found to be soluble in boiling water without the separation of oily drops. The mixture is then allowed to cool and is then transferred to suitable vessels. The potassa used should be of the full strength (90 per cent.) as directed by the Pharm. <U. S., p 346. F C F, p

Soft soap is soluble in about 5 parts of hot water to a nearly clear liquid, and in 2 parts of hot alcohol, leaving only a small percentage of insoluble residue.

SODA. Soda. Sodium Hydrate. Sodium Hydroxide. Caustic Soda. $NaOH$.

Caustic soda as it is generally known is soluble in 1.7 parts of water at N T. and in 0.8 part of boiling water; it is very soluble in alcohol. It fuses at 525°C. (977°F.). It deliquesces rapidly when exposed to the air, and must be handled cautiously. <U. S., p 350. F C F, p 746.

SODII ACETAS. Sodium Acetate. $NaC_2H_3O_3+3H_2O$.

Soluble in 1.4 parts of water and in 30 parts of alcohol at N T.; in 0.2 part of boiling water and in 2 parts of boiling alcohol. When heated to 60°C, (140°F.). it begins to liquify and at 123°C. (253.4°F.), it becomes dry and anhydrous. <U, S. p 351. F C F, p 747.

SODII ARSENAS. Sodium Arsenate. Sodii Arsenias, Pharm. 1880. $Na_2HNsO_4+7H_2O$.

Note the change of spelling by the omission of i from the former official title. Soluble in 4 parts of water at N T., but very slightly soluble in alcohol. <U. S., p 352. F C F, p 178, 747.

SODII BENZOAS. Sodium Benzoate. $NaC_7H_5O_2$.

Soluble in 1.8 parts of water and in 45 parts of alcohol at N T. <U. S., p 353. F C F, 747.

SODII BICARBONAS. Sodium Bicarbonate. $NaHCO_3$.

Soluble in 11.3 parts of water at N T.; loses carbon disulphide above that temperature, and at boiling point of water is converted into sodium carbonate. Insoluble in alcohol or ether. <U. S., p 353. F C F, p 784.

SODII BISULPHIS. Sodium Bisulphite. $NaHSO_3$.

Soluble in 4 parts of water and in 72 parts of alcohol at N T.; in 2 parts of boiling water and in 49 parts of boiling alcohol, <U. S., p 354 F C F, p 748.

SODII BORAS. Sodium Borate. Borax, $Na_2B_4O_7+10H_2O$.

This salt which is commonly known as *Borax* is soluble in 16 parts of water at N T., and in 0.5 parts of boiling water. It is insoluble in alcohol. In glycerin it is soluble at 80°C. (176°F.), weight for weight. It is alkaline. <U. S., p 355. F C F. p 748.

SODII BROMIDUM. Sodium Bromide. $NaBr$.

Soluble ie 1.2 parts of water and in 13 parts of alcohol at N T.; in 0.5 part of boiling water, and in 11 parts of boiling alcohol. <U. S., p 356. F C F, p 749.

SODII CARBONAS. Sodium Carbonate. $Na_2CO_3+10H_2O$.

This salt which is commonly known as *sal soda* effloresces when exposed to the air, losing about half its water of crystallization (31.46 per cent. of its weight), and is reduced to a white powder. Soluble in 1.6 parts of water at N T. and in 0.2 part of boiling water; insoluble in ether and alcohol; soluble in 1.02 parts of glycerin. It is alkaline. <U. S., p 357. F C F, p 749.

SODII CARBONAS EXSICCATUS. Dried Sodium Carbonate. Sodium carbonate 200 gm. (or 2 pounds) to make 100 gm. (or 1 pound). The crystals are to be broken in small fragments and allowed to effloresce for several days in a warm atmosphere at a temperature not exceeding 25° C. (77° F.) until they are completely disintegrated. The white powder which results is then to be dried at a temperature of about 40° C. (113° F.) until its weight is reduced to 100 gm. The powder is to be passed through a sieve and kept in well-stoppered bottles. <U. S., p 357. F C F, p 750

SODII CHLORAS. Sodium Chlorate. $NaClO_3$.

This salt should be kept in glass-stoppered bottles, and great care exercised in handling it as dangerous explosions are liable to occur when it comes in contact, or is mixed with organic matters, such as cork, tannic acid, sugar, etc., or with sulphur antimony sulphide, phosphorous or other easily oxidizable agents.

Soluble in 1.1 parts of water and in about 100 parts of alcohol and in about 5 parts of glycerin at N T. When heated it melts and then gives off oxygen, about 45 per cent of its weight. <U. S., p 358. F C F, p 750.

SODII CHLORIDUM. Sodium Chloride. NaCl.

This is known commercially as "salt," the most common chemical substance. Soluble in 2.8 parts of water at N T., and in 2.5 parts of boiling water. In alcohol it is almost insoluble, and in ether and chloroform it is insoluble. When heated this salt decrepitates, (snaps) it fuses at red heat, and at a white heat slowly volatilizes and is partly decomposed. <U. S., p 359. F C F, p 750.

SODII HYPOPHOSPHIS. Sodium Hypophosphite. $NaPH_2O_2+H_2O$.

Soluble in 1 part of water and in 30 parts of of alcohol at N T.; in 0.12 part of boiling water and in 1 part of boiling alcohol. <U. S., p 359. F C F, p 751.

SODII HYPOSULPHIS. Sodium Hyposulphite. SODIUM THIOSULPHATE. $Na_2S_2O_3+5H_2O$.

Soluble in 0.65 part of water at N T. and in about 0.5 part at 20°C. (68°F.); at a boiling point it is rapidly decomposed. When rapidly heated to about 50°C. (122°F.), it melts; when slowly heated it effloresces, and afterwards, at 100°C. (212° F,), it loses all its water of crystallization (36.3 per cent.). <U. S., p 360. F C F, 752.

SODII IODIDUM, Sodium Iodide. NaI.

Soluble in 0.6 part of water and in about 3 parts of alcohol at N T.; in 0.33 part of boiling water and in 1.4 part of boiling alcohol. <U. S., p 361 F C F, p 752.

SODII NITRAS. Sodium Nitrate. $NaNO_3$.

Sodium nitrate is quite similar to potassium nitrate or saltpetre and is sometimes sold for it. It is somewhat deliquescent in moist air, soluble in 1.3 parts of water and in about 100 parts of alcohol at N T.; in 0.6 part of boiling water and in 40 parts of boiling alcohol. At 312°C. (593.6°F.) it melts without decomposition, and at a higher temperature parts with oxygen and is reduced to a nitrite. <U. S., p 362. F C F, p 752.

SODII NITRIS. Sodium Nitrite. $NaNO_2$. *new.*

Soluble in 1.5 parts of water at N T., and very soluble in boiling water, but slightly soluble in alcohol. U. S., p 363. F C F, p 752.

SODII PHOSPHAS. Sodium Phosphate. SODIUM ORTHOPHOSPHATE. $Na_2HPO_4+12H_2O$.

Exposed to the air this salt gradually effloresces, losing 25 per cent. of its weight. Soluble in 5.8 parts of water at N T., and in about 1.5 parts of boiling water; it is insoluble in alcohol. It fuses at about 40°C. (104°F.) making a colorless liquid. At 100°C. (212°F.) it loses its water of crystallization, (60.3 per cent.) and at a red heat is converted into sodium pyrophosphate. <U. S., p 363. F C F, p 753.

SODII PYROPHOSPHAS. Sodium Pyrophosphate. $Na_4P_2O_2+10H_2O$.

Soluble in 12 parts of water at N T., and in 1.1 parts of boiling water. Insoluble in alcohol. <U. S., p 364. F C F. p 754.

SODII SALICYLAS. Sodium Salicylate. $NaC_7H_5O_3$.

Soluble in 0.9 part of water and in 6 parts of alcohol at N T. Also soluble in glycerin. <U. S., p 365. F C F, p 754.

SODII SULPHAS. Sodium Sulphate. GLAUBER'S SALT. $Na_2SO_4+10H_2O$.

This salt effloresces when exposed the to air, and finally loses all its water of crystallization. Soluble in 2.8 parts of water at N T.; also in glycerin, but insoluble in alcohol. It fuses at 33°C. (114°F.), and when heated to 100°C. (212°F.), parts with all its water of crystallization (55.9 per cent.). <U. S., p 366. F C F, p 755.

SODII SULPHIS. Sodium Sulphite. $Na_2SO_3\ 7H_2O$.

Soluble in 4 parts of water at N T. and in 0.9 part of boiling water; but slightly soluble in alcohol. <U. S., p 366, F C F, p 755.

SODII SULPHOCARBOLAS. Sodium Sulphocarbolate. SODIUM PARAPHENOLSULPHONATE. $NaSO_3C_6H_4(OH)+2H_2O$.

Soluble in 4.8 parts of water and in 132 parts of alcohol at N T.; in 0.7 part of boiling water and in 10 parts of boiling alcohol. At a little above 100°C. (212°F.) it loses all its water of crystallization (15.5 per cent.) and becomes white. <U. S., p 367. F C F. p 756.

SPARTEINE SULPHAS. Sparteine Sulphate. $C_{15}H_{26}N_2H_2$

SO_4+4H_2O. "The neutral sulphate of an alkaloid obtained from Scoparius." *new.* <U. S., p 367.

This alkaloidal salt is newly introduced into the Pharm. It is described as colorless, white prismatic crystals or granular powder, odorless and having a slightly saline, somewhat bitter taste. Very soluble in alcohol and water. Its action is claimed to resemble digitalis and the dose is from 1½ to 2 grains.

SPIRITI. Spirits. In the new Pharm. four new spirits have been added. *Spiritus Amygdalæ Amaræ, Spiritus Glonoini, Spiritus Aurantii Compositus, and Spiritus Phosphori*, and one has been dismissed, *Spiritus Odoratus.*

It will be noted that in many of the spirits deodorized alcohol is now directed. This is a great improvement in the more delicate spirits intended for flavoring, as ordinary alcohol has an objectionable odor.

The formulas apparently show considerable change because of the use of metric measure chiefly, instead of parts by weight, the varying specific gravity of the ingredients making it necessary to change the figures, but in reality the proportions are but little altered. The change in strength also in ether and acids must be borne in mind in working the new formulas. For formulas of other spirits, of which there are many <F C F, p 759 to 772.

SPIRITUS ÆTHERIS. Spirit of Ether. The present formula is, ether 325 Cc. (or 11 fl.ounces), alcohol 675 Cc. (or 22⅞ fl.ounces). They are to be mixed to make 1000 Cc. (or 33⅞ fl.ounces). <U. S., p 368. F C F, p 759.

Ether was directed in the earlier editions of the 1880 Pharm but it was claimed to be an error, and was afterward changed to read stronger ether, which was intended, and which nearly corresponds with the present official ether.

SPIRITUS ÆTHERIS COMPOSITUS. Compound Spirit of Ether. HOFFMANN'S ANODYNE. The present formula is ether 325 Cc. (or 11 fl.ounces), alcohol 650 Cc. (or 22 fl.ounces), etherial oil 25 Cc. (or 7 fl.drachms). To be mixed together to make 3000 Cc. (or 33⅜ fl.ounces). <U. S., p 368. F C F, p 760.

SPIRITUS ÆTHERIS NITROSI. Spirit of Nitrous Ether. "An alcoholic solution of ethyl nitrite, $C_2H_2NO_5$, yielding, when freshly prepared and tested in a nitrometer, not less than 11 times its own volume of nitrogen dioxide. NO." <U. S., p 369. F C F, p 760.

The present formula is entirely and materially changed, and is as follows: Sodium nitrite 770 gm (or 27 ounces av.+70 grains), sulphuric acid 520 gm. (or 17 ounces av. + 150 grains), sodium carbonate 10 gm. (or 154 grains), potassium carbonate, completely deprived of water by drying, 30 gm. (or 463 grains), deodorized alcohol and water, each, a sufficient quantity. The sodium nitrite is to be dissolved in 1000 Cc. (or 34 fl.ounces) of water, and the solution put into a suitable flask, connected with a condenser

which is to be kept cold by ice-cold water. Deodorized alcohol 550 Cc. (or 18¾ fl.ounces) is then to be added and well mixed. A funnel-tube is then to be inserted through a cork fitted into the mouth of the flask, and is to be so arranged that its lower orifice is beneath the surface of the liquid in the flask; a receiver is to be connected with the condenser, and is to be kept surrounded with a mixture of common salt and crushed ice. When all is arranged the sulphuric acid previously diluted with 1000 Cc.(or 34 fl.ounces) of water is to be gradually introduced through the funnel-tube into the flask. The addition of the acid generates heat and distillation will usually begin before the acid has all been added. When all the acid has been added the distillation is to be regulated either by the application or withdrawal of gentle heat until no more nitrous ether distills over. The distillate is first to be washed with 100 Cc. (or 4 ounces) of ice-cold water, to remove any alcohol which may have passed over, and then with 100 Cc. (or 4 ounces) of ice-cold water in which the sodium carbonate has previously been dissolved in order to removed any trace of acid that may have passed over. The purified ether is then to be separated from the aqueous liquid and agitated in a well-stoppered vial with the potassium carbonate to remove any trace of water. It is then to be filtered through a pellet of cotton in a covered funnel into a tared (weighed) bottle containing 2000 Cc. (or 67⅝ fl.ounces) of deodorized alcohol. The increase of weight of the tared bottle and its contents is to be noted and represents the weight of the nitrous ether filtered into the alcohol; enough deodorized alcohol is then to be added to make the mixture weigh 22 times the weight of the nitrous ether added.

The sp. gr. of this spirt at N T. should be about 0.836 to 0.842, and it should contain about 4 per cent. of pure ethyl nitrite. The previous Pharm. formula claimed to make this preparation to contain 5 per cent. of ethyl nitrite, and to have a sp. gr. of 0.823 to 0.825.

SPIRITUS AMMONIÆ. Spirit of Ammonia. "An alcoholic solution of ammonia, NH_3, containing 10 per cent., by weight, of the gas." <U. S., p 370. F C F, p 761.

The formula is the same as before except that metric measure is directed instead of parts. Stronger ammonia water 250 Cc. (or 1 pint), alcohol, recently distilled, and after distillation, kept in glass vessels, a sufficient quantity. The stronger ammonia water is to be poured into a flask provided with a safty funnel and connected by means of a glass condenser with a well-cooled receiver containing 500 Cc. (or 2 pints) of alcohol, the delivery tube

of the condenser reaching nearly to the bottom of the receiver. The flask is then to be heated carefully and very gradually to a temperature not exceeding 60° C (140° F.), and maintained at that temperature for about 10 minutes. The receiver is then to be disconnected and, having ascertained the ammoniacal strength of the contents by means of normal sulphuric acid (rosolic acid test-solution being used as indicator), enough alcohol is to be added to make the product contain 10 per cent., by weight of ammonia.

It should be colorless, having a strong odor of ammonia and sp. gr. at N T. about 0.810.

SPIRITUS AMMONIÆ AROMATICUS. Aromatic Spirit of Ammonia. The present formula differs slightly from the former but the medicinal ingredients are the same. Ammonium carbonate, in translucent pieces, 34 gm. (or 1 ounce av. + 87 grains), ammonia water 90 Cc. (or 3 fl.ounces), oil of lemon 10 Cc. (or 160 minims), oil of lavender flowers 1 Cc. (or 16 minims), alcohol 700 Cc (or 23⅔ fl.ounces), distilled water a sufficient quantity to make 1000 Cc. (or 33⅞ fl.ounces). The ammonia water is to be put in a flask and distilled water 140 Cc. (or 4¾ fl.ounces) is to be added, and afterwards the ammonium carbonate reduced to a moderately fine powder. The flask is to be stopped and agitated until the salt is dissolved (which requires some time). The alcohol is to be put into a graduated bottle of suitable capacity, the oils added and then gradually the solution of ammonium carbonate, and afterwards enough distilled water to make the product measure 1000 Cc. (or 33⅞ fl.ounces). This is to be set aside in a cool place for a few hours and then filtered through white paper in a well-covered funnel. <U. S., p 371. F C F, p 761.

This is nearly colorless when first prepared, but gradually acquires a somewhat darker tint. Its sp gr. is 0.905 at N T.

SPIRITUS AMYGDALÆ AMARÆ. Spirit of Bitter Almond. Essence of Bitter Almond. *new.* Oil of bitter almond 10 Cc. (or 1 fl.drathm), alcohol 800 Cc. (or 10 fl.ounces), distilled water a sufficient quantity. The oil is to be dissolved in the alcohol and enough distilled water added to make 1000 Cc. (or 12½ fl.ounces). It contains 10 per cent. by volume of the essential oil. <U. S., p 371. F C F, p 410.

SPIRITUS ANISI. Spirit of Anise. Oil of anise 100 Cc. (or 1 fl.ounce), deodorized alcohol 900 Cc. (or 9 fl.ounces). They are to be mixed. It contains 10 per cent., by volume, of the essential oil. <U, S., p 372. F C F, p 764.

SPIRITUS AURANTII. Spirit of Orange. Oil of orange peel 50 Cc. (or 1 fl.ounce), deodorized alcohol 950 Cc. (or 19 fl.ounces). They are to be mixed. <U. S., p 372. F C F, p 764.

Care must be taken to use fresh orange oil that has no odor of turpentine. It contains 5 per cent., by volume, of the essential oil.

SPIRITUS AURANTII COMPOSITUS. Compound Spirit of Orange. *new.* Oil of orange peel 200 Cc. (or 4 fl.ounces), oil of lemon 50 Cc. (or 1 fl.ounce), oil of coriander 20 Cc. (or 96 minims), oil of anise 5 Cc. (or 48 minims), deodorized alcohol a sufficient quantity to make 1000 Cc. (or 20 fl.ounces). They are to be mixed and the mixture is to be kept in small bottles well-stopped in a cool place. <U. S., p F C F, p 276.

Care must be taken to use fresh oil of orange and lemon, which has no odor of turpentine.

SPIRITUS CAMPHORÆ. Spirit of Camphor. Of all preparations which were changed in the 1880 Pharm. this, probably, caused the greatest dissatisfaction, as it contained 20 per cent., by weight, of water, which unfitted it for mixing with many liniments and solutions of oils in which it is frequently required. The present formula omits the water and does away with the objection. Camphor 100 gm (or 3½ ounces av.), alcohol a sufficient quantity to make 1000 Cc. (or 33 fl.ounces). The camphor is to be dissolved in 800 Cc. (or 25 fl.ounces) of alcohol, and the solution filtered through paper; and then, enough alcohol added through the filter to make the required measure 1000 Cc. (or 33 fl.ounces). It contains 10 per cent. of camphor. <U. S., p 372. F C F, p 765.

SPIRITUS CHLOROFORMI. Spirit of Chloroform. The present formula is: Chloroform 60 Cc. (or 1 fl.ounce), alcohol 940 Cc. (or 31⅓ fl.ounces). They are to be mixed. It contains 6 per cent. by measure, or nearly 10 per cent., by weight, of chloroform. <U. S., p 373. F C F, p 765.

SPIRITUS CINNAMOMI. Spirit of Cinnamon. Oil of cinnamon 100 Cc. (or 1 fl.ounce), alcohol 900 Cc. (or 9 fl.ounces). They are to be mixed. It contains 10 per cent., by measure, of cinnamon oil. <U. S., p 373. F C F, p 706.

SPIRITUS FRUMENTI. Whisky. "An alcoholic liquid obtained by the distillation of the mash of fermented grain (usually of mixtures of corn, wheat and rye), and at least two years old." <U. S., p 373. F C F, p 767.

To many druggists this is a "familiar spirit." Its sp. gr. should not be more than 0.930 nor less than 0.917, corresponding, approximately, to an alcoholic strength of 44 to 50 per cent. by weight, or 50 to 58 per cent. by volume.

SPIRITUS GAULTHERIÆ. Spirit of Gaultheria. Essence of Wintergreen. Oil of gaultheria 50 Cc. (or 1 fl.ounce), alcohol 950 Cc. (or 19 fl.ounces). They are to be mixed. <U. S., p 373. F C F. p 767.

The 1880 formula was 3 parts of the oil with 97 parts, by weight, of alcohol.

SPIRITUS GLONOINI. Spirit of Glonoin. Spirit of Nitroglycerin. "An alcoholic solution of glonoin [Glyceryl (or Propenyl) trinitrate, or nitroglycerin; $C_3H_5(NO_3)_3$], containing 1 per cent., by weight, of the substance." *new.* <U. S., p 374. F C F, p 516.

Great care should be used in handling this spirit, for although it is safe as it is, if the alcohol should be evaporated, leaving the nitroglycerin free, an explosion might occur. Its sp. gr. is 0.826 to 0.832 at N T. The dose is $\frac{1}{100}$ to $\frac{1}{50}$ grain.

SPIRITUS JUNIPERI. Spirit of Juniper. Oil of juniper 50 Cc. (or 1 fl.ounce), alcohol 950 Cc. (or 19 fl.ounces). They are to be mixed. It contains 5 per cent., by volume, of the essential oil. The 1880 revision directed 3 parts of the oil with 97 parts of alcohol, by weight.

SPIRITUS JUNIPERI COMPOSITUS. Compound Spirit of Juniper. Oil of juniper 8 Cc. (or 8 minims), oil of caraway 1 Cc. (or 1 minim), oil of fennel 1 Cc. (or 1 minim), alcohol 1400 Cc. (or 3 fl.ounces), water a sufficient quantity to make 2000 Cc. (or 4 fl.ounces + 75 minims). The oils are to be dissolved in the alcohol and enough water gradually added to make the product 2000 gm (or 4⅓ fl.ounces). <U. S., p 374. F C F, p 768. The 1880 formula was oil of juniper 10 parts, oil of caraway 1 part, oil of fennel 1 part, alcohol 3000 parts, water enough to make 5000 parts, all by weight.

SPIRITUS LAVENDULÆ. Spirit of Lavender. Oil of lavender flowers 50 Cc. (or 1 ounce), deodorized alcohol 950 Cc. (or 19 fl.ounces. They are to be mixed. The present formula directs 5 per cent. of the volatile oil, by volume, the 1880 Pharm. directs 3 parts of the oil with 97 parts of alcohol, by weight. <U. S., p 375. F C F, p 768.

SPIRITUS LIMONIS. Spirit of Lemon. Essence of Lemon. The present formula directs oil of lemon 50 Cc. (or 1 fl.ounce), lemon peel grated 50 gm. (or 1 ounce av.), deodorized alcohol, sufficient to make 1000 Cc. (or 20 fl.ounces). The oil of lemon is

to be dissolved in 900 Cc. (or 18 fl.ounces) of deodorized alcohol and the grated lemon peel added, and the mixture allowed to macerate for 24 hours. It is then to be filtered and enough deodorized alcohol passed through the filter to make 1000 Cc. (or 20 fl.ounces) of the essence. <U. S., p 375. F C F, p 417, 768. This contains 5 per cent., by volume, of the essential oil.

SPIRITUS MENTHÆ PIPERITÆ. Spirit of Peppermint. Essence of Peppermint. Oil of peppermint 100 Cc. (or 2 ounces), peppermint bruised 10 gm. (or 93 grains), alcohol a sufficient quantity to make 1000 Cc. (or 20 fl.ounces). The oil of peppermint is to be dissolved in 900 Cc. (or 18 fl.ounces) of alcohol, and the peppermint added and the mixture allowed to macerate for 24 hours. It is then to be filtered and enough alcohol passed through the filter to make the measure 1000 Cc. (or 20 fl.ounces). U. S., p 375. F C F, p 769. This contains 10 per cent., by volume, of the essential oil.

SPIRITUS MENTHÆ VIRIDIS. Spirit of Spearmint. Essence of Spearmint. Oil of spearmint 100 Cc. (or 2 ounces), spearmint, bruised, 10 gm. (or 93 grains), alcohol a sufficient quantity to make 1000 Cc. (or 20 fl.ounces). The oil of spearmint is to be dissolved in 900 Cc. (or 18 fl.ounces) of alcohol and the spearmint added and the mixture allowed to macerate for 24 hours. It is then to be filtered and enough alcohol passed through the filter to make the measure 1000 gm. (or 20 fl.ounces). <U. S., p 376. F C F, p 769. This contains 10 per cent., by volume, of the essential oil.

SPIRITUS MYRCIÆ. Spirit of Myrcia. Bay Rum. This was first introduced in the 1880 Pharm. and the preparation remains practically the same in the present revision. Oil of myrcia 16 Cc. (or 1 fl.ounce), oil of orange peel 1 Cc. (or ½ fl.drachm), oil of pimenta 1 Cc. (or ½ fl.drachm), alcohol 1220 Cc. (or 81¼ fl.ounces), water a sufficient quantity to make 2000 Cc. (or 125 fl.ounces). The oils are to be mixed with the alcohol, and water gradually added until the solution measures 2000 Cc. (or 125 fl.ounces). The mixture is to be set aside in a a well-stoppered bottle, for 8 days, and then filtered through paper in a well-covered funnel. <U. S., p 376. F C F, p 770, 1144.

SPIRITUS MYRISTICÆ. Spirit of Nutmeg. Essence of Nutmeg. The present formula is: Oil of nutmeg 50 Cc. (or 1 fl.ounce), alcohol 950 Cc. (or 19 fl.ounces). They are to be mixed.

It contains 5 per cent., by volume, of the essential oil. <U. S., p 376. F C F, p 770. The 1880 Pharm. directed 3 parts of the oil with 97 parts of alcohol, by weight.

SPIRITUS PHOSPHORI. Spirit of Phosphorus. TINCTURE OF PHOSPHORUS. *new.* Phosphorus 1.2 gm. (or 18½ grains), absolute alcohol a sufficient quantity to make 1000 Cc. (or 33⅞ fl.ounces). The phosphorus is to be carefully weighed, in a tared (weighed) capsule containing water, then quickly dried with blotting paper and introduced into a flask containing 1000 Cc. (or 33⅞ fl.ounces) of absolute alcohol. The flask is to be connected with an upright condenser supplied with cold water, and heat is to be applied to the flask by water-bath so that the alcohol may be kept gently boiling until the phosphorus is dissolved. The liquid is then allowed to become cold, and, if necessary, enough absolute alcohol is to be added to make the measure 1000 Cc. (or 33⅞ fl.ounces)." <U. S., p 377.

This spirit should contain about $\frac{1}{850}$ per cent. of phosphorous, or a little less than ½ grain in a fl.ounce, or about $\frac{1}{100}$ grain in 10 minims, which is the ordinary dose.

SPIRITUS VINI GALLICI. Brandy. "An alcoholic liquid obtained by the distillation of the fermented, unmodified juice of fresh grapes, and at least four years old." <U. S., p 377. F C F, p 771, 1187.

Sp. gr. not more than 0.941 nor less than 0.925, corresponding, approximately, to an alcoholic strength of 39 to 47 per cent, by weight, or 46 to 55 per cent., by volume.

STRONTII BROMIDUM. Strontium Bromide. $SrBr_2+6H_2O$. *new.*

This salt has lately come into prominence in the treatment of epilepsy, and some forms of nervous disease. It is prescribed in doses of 5 to 15 grains. It is soluble in 1.05 parts of water at N T. and in 0,5 part of boiling water. It is also soluble in alcohol. U. S., p 378. F C F, p 774.

STRONTII IODIDIUM. Strontium Iodide. SrI_2+6H_2O. *new.*

This salt has also, lately come into use for the treatment of albumninuria, rheumatism, etc. The dose is from 3 to 10 grains. It is soluble in 0.6 part of water at N T. and in 0.27 part of boiling water. It is also soluble in alcohol. <U. S., p 379. F C F, p 774.

STRONTII LACTAS. Strontium Lactate. $Sr(C_3H_5O_3)_2+3H_2O$. *new.*

Another strontium salt which has met with favor for uses similar to the preceding. The dose is from 3 to 10 grains. Soluble in about 4 parts of wat at N T. and in about 0.5 part of boiling water. It is also soluble in alcohol. <U. S., p 380. F C F, p 774.

STRYCHNINA. Strychnine. $C_{21}H_{22}N_2O_2$. "An alkaloid obtained from Nux Vomica, and also obtainable from other plants of the natural order *Loganiaceæ.*" <U. S., p 381. F C F, p 130.

Strychnine has such an intensly bitter taste that its solution even as dilute as 1 in 700,000 may be recognized. It is soluble in 6700 parts of water, and in 110 parts of alcohol at N T.; in 2500 parts of boiling water and in 12 parts of boiling alcohol. It is insoluble in ether but soluble in 7 parts of chloroform.

STRYCHNINÆ SULPHAS. Strychnine Sulphate. $(C_{21}H_{22}N_2O_2)_2H_2SO_4+5H_2O$.

Soluble in 50 parts of water and in 109 parts of alcohol at N T.; in 2 parts of boiling water and in 8.5 parts of boiling alcohol; almost insoluble in ether. The dose is from $\frac{1}{100}$ to $\frac{1}{32}$ grain. <U. S., p 381. F C F, p 131.

STYRAX. Storax. "A balsam prepared from the inner bark of *Liquidambar orientalis.*" <U. S., p 382. F C F, p 182.

This balsam is insoluble in water, but soluble in an equal weight of warm alcohol.

SULPHURIS IODIDUM. Sulphur Iodide. Washed sulphur 10 gm. (or 1 ounce), iodine 80 gm. (or 4 ounces). The sulphur and iodine are to be thoroughly mixed by triturating them together in a mortar. The mixture is then to be introduced into a flask which is to be loosely stopped. Then heat is to be applied to the flask by means of a water-bath, gradually, and not exceeding 60° C. (140° F.), and the flask is to be agitated occasionally until the ingredients combine and become of a uniformily dark color throughout. The heat is then to be increased to the boiling point of the water so as to fuse the mass, and if any iodine has sublimed the flask containing the fused mass is to be inclined so that the iodine may combine. The contents of the flask is then to be poured out upon a plate or other cold surface, and after cooling, the product is to be broken up and kept in glass-stoppered bottles in a cool place. <U. S., p 382. F C F, p 780.

Nearly insoluble in water; soluble in about 60 parts of glycerin, very soluble in carbon disulphide. Alcohol and ether dissolve out the iodine, leaving the sulphur.

SULPHUR LOTUM. Washed Sulphur. S. Sublimed sulphur 100 gm. (or 10 ounces), ammonia water 10 Cc. (or 1 fl.ounce), water a sufficient quantity. The sublimed sulphur is to be passed through a No. 30 sieve and mixed thoroughly with 100 Cc. (or 10 ounces), of water to which 10 Cc. (or 1 ounce) of ammonia water has been added. This is to be digested in a closed vessel for 3 days, with occasional agitation, then 100 Cc. (or 10 ounces) of water is to be added, the mixture transferred to a muslin strainer and the sulphur washed with water until the washings cease to

impart a blue color to red litmus paper. It is then to be drained, pressed and dried, and passed through a No. 30 sieve. <U. S., p 383. F C F, p 779.

The washing of the sulphur removes all free sulphurous acid. This preparation is insoluble in water and only slightly soluble in other common media, but a portion of it dissolves readily in carbon disulphide, leaving a residue of insoluble sulphur, which may be dissolved by a boiling solution of an alkaline hydrate. Heated to 115°C. (239°F.) it melts, and at a higher temperature volatilizes.

SULPHUR PRÆCIPITATUM. Precipitated Sulphur. S. This preparation is commonly known as *Lac Sulphur*. Sublimed sulphur 100 gm. (or 10 ounces); lime 50 gm. (or 5 ounces), hydrochloric acid and water, each, a sufficient quantity. The lime is to be slacked and mixed uniformily with 500 Cc. (or 50 ounces) of water. To this the sublimed sulphur, previously well dried and sifted, is to be added and well mixed. Then 1000 Cc. (or 100 ounces) of water is to be added and the mixture boiled during 1 hour, stirring constantly, and replacing occasionally the water lost by evaporation. The vessel is then to be covered and the contents allowed to cool and become clear by the subsidence of the precipitate; then the clear solution is to be drawn off and the remainder filtered, and the filtered solution mixed with the portion drawn off. To this liquid hydrochloric acid previously diluted with an equal volume of water is to be gradually added with constant stirring until the liquid is nearly neutralized, but still retains an alkaline reaction and a yellow color. The precipitate which forms is to be collected on a strainer and washed until the washings are tasteless and cease to show an acid reaction with litmus paper. It is then to be rapidly dried at a moderate heat and kept in well-stoppered bottles. <U. S., p 384. F C F, p 779.

Heated to 115°C. (239°F.) this melts, and at a higher temperature is volatilized. It is insoluble in water, and only slightly soluble in other common media. It is readily soluble in carbon disulphide. also in benzin, benzol, oil of turpentine, and many other oils, and in ether, chloroform, and boiling aqueous solutions of alkaline hydrates.

SULPHUR SUBLIMATUM. Sublimed Sulphur. S. This is commonly known as "sulphur," or "flowers of sulphur." It is insoluble in water and but slightly soluble in other common media. It melts at 115° C. (239° F.), and is volatilized at a higher temperature. It combines chemically with several of the elements forming *sulphides*. <U. S., p 385. F C F, p 878.

SUPPOSITORIA. Suppositories. In the present Pharm. the general formula and directions for preparing suppositories are

essentially the same as in the former revision, but as the language is different we quote from the new. "Take of the medicinal ingredient, the prescribed quantity, oil of theobroma a sufficient quantity. Having weighed out the medicinal ingredient or ingredients, and the quantity of oil of theobroma required according to the kind of suppository to be prepared, (see below), mix the medicinal portion (previously brought to the proper consistence if necessary) with a small quantity of the oil of theobroma by rubbing them together, and add the mixture to the remainder of the oil of theobroma, previously melted and cooled to the temperature of 35° C. (95° F.). Then mix thoroughly without applying more heat, and immediately pour the mixture into suitable moulds. The moulds must be kept cold by being placed on ice or by immersion in ice-cold water before the melted mass is poured in. In the absence of suitable moulds, suppositories may be formed by allowing the mixture, prepared as above, to cool, care being taken to keep the ingredients well mixed, dividing the mass into parts, of a definite weight each, of the proper shape. Unless otherwise specified suppositories should have the following weights and shapes, corresponding to their several uses:"

Rectal Suppositories should be cone-shaped, and of a weight of about *one* (1) *gramme* (15 grains.)

Urethral Suppositories should be pencil-shaped,and of a weight of about *one* (1) *gramme* (15 grains).

Vaginal Suppositories should be globular, and of a weight of about *three* (3) *grammes* (46 grains). <U. S., p 385. F C F, p 782.

SUPPOSITORIA GLYCERINI. Suppositories of Glycerin. *new.* Suppositories of glycerin have been recently introduced and are now, for the first time, made official. Glycerin 60 gm. (or 2 ounces av. + 51 grains), sodium carbonate 3 gm. (or 46 grains), stearic acid 5 gm. (or 77 grains), to make 10 rectal suppositories. The sodium carbonate is to be dissolved in the glycerin in a capsule by the aid of the heat of a water-bath. The stearic acid is then to be added and the mixture carefully heated until it is dissolved and the escape of carbonic acid gas has ceased. The melted mass is then to be poured into suitable moulds, and, when they are cold the suppositories are to be removed and wrapped in tinfoil. These should be freshly made when wanted for use. They are highly esteemed for habitual constipation. Other medicament may be added if desired.

SYRUPI. Syrups. In the present Pharm. two syrups which were official in the former revision have been dismissed, viz: *Syrupus Ferri Bromidi* and *Syrupus Limonis*. No new ones have been added.

In adopting metric weight and measure in the formulas, there appears a considerable change, relatively, from the former standard but when the sp. gr. of the syrups is taken into account the general change is really slight. In formulas which are materially altered the change is noted. For syrups, other than the official, of which there are many <F C F, p 790 to 867.

SYRUPUS. Syrup. In the drug business this is commonly known as *simple syrup* and is prescribed by most physicians, abbreviated "*Syr. Simp.*" (*syrupus simplex* or, in the genitive, following ℞, *syrupi simplicis*). It is probably the most used of any official preparation. The present formula is: Sugar in coarse powder 850 gm. (or 30 ounces av.), distilled water enough to make 1000 Cc. (or 34 fl.ounces). The sugar is to be dissolved with aid the of heat in 450 Cc. (or 16 fl.ounces) of distilled water, the temperature is then to be raised to the boiling point, and the syrup is to be strained and enough distilled water passed through the strainer to make the product, when cold, measure 1000 Cc. (or 34 fl.ounces). <U. S., p 386. F C F, p 791. A cold process for preparing syrup is also given in the new Pharm., p 387 as follows:

"Press down into the neck of a percolater or funnel of suitable size, a tapering piece of coarse, well-cleaned sponge, not too tightly, and in such a manner that the whole sponge shall be within the neck of the percolator, its upper end being about half an inch below its commencement. Place the sugar into the apparatus, make its surface level without shaking or jarring, then carefully pour on 450 Cc. (or 16 ounces) of distilled water, and regulate the flow of the liquid, if necessary, so that it will pass out in rapid drops. Return the first portions of the percolate, until it runs through clear, and, when all the liquid has passed, follow it by distilled water added in portions, so that all the sugar may be dissolved and the product measure 1000 Cc. or 34 fl.ounces."

The sp. gr. of the present official syrup is 1.317, while the former official syrup was 1.310, showing a little larger proportion of sugar in the present preparation. It may be stated that most druggists do not make syrup fully up to the official standard, as it is liable to crystallize; 7 pounds av. of granulated sugar with enough distilled water to make 1 gallon, makes a good syrup for ordinary dispensing and use; a little less quantity of sugar is required in winter than in summer.

SYRUPUS ACACIÆ. Syrup of Acacia. Mucilage of acacia, recently prepared, 25 Cc. (or 1 fl.ounce), syrup 75 Cc. (or 3 fl. ounces). Mix them when wanted for use. <U. S., p 387. F C F, p 792.

SYRUPUS ACIDI CITRICI. Syrup of Citric Acid. As syrup of lemon is omitted in the present revision this is intended to take its place, and whenever syrup of lemon is prescribed it may be

used. The proportion of spirit of lemon is no doubt increased for that purpose. The present formula is: Citric acid 10 gm. (or 60 grains), water 10 Cc. (or 1 fl.drachm), spirit of lemon 10 Cc. (or 1 fl.drachm), syrup a sufficient quantity to make 1000 Cc. (or 12½ fl.ounces). The citric acid is to be dissolved in the water and the solution mixed with 500 Cc. (or 6 ounces) of syrup. The spirit of lemon is then to be added, and lastly enough syrup to make the product 1000 Cc. (or 12½ fl.ounces), and the whole thoroughly mixed. <U. S., p 387. F C F, p 793.

SYRUPUS ACIDI HYDRIODICI. Syrup of Hydriodic Acid. "A syrupy liquid containing about 1 per cent., by weight, of absolute Hydriodic acid (HI), or about 1.3 gm. in 100 Cc." <U. S., p 388. F C F, p 793. Potassium iodide 13 gm. (or 1⅝ ounces av.), potassium hypophosphite 1 gm. (or 55 grains), tartaric acid 12 gm. (or 1½ ounces av.), water 15 Cc. (or 1¾ fl.ounces), diluted alcohol and syrup, each, a sufficient quantity to make 1000 gm. (or 12½ ounces av.) The potassium salts are to be dissolved in the water, and the tartaric acid in 25 Cc. (or 3 fl.ounces) of diluted alcohol. The two solutions are then to be mixed in a vial and shaken thoroughly and placed in ice water for half an hour, shaking occasionally. The mixture is then to be filtered through a small, rapidly acting white filter paper, the vial carefully washed with diluted alcohol and the washings passed through the filter until the filtrate ceases to produce more than a faint cloudiness when a drop or two is allowed to fall into silver nitrate test-solution. The filtrate is then to be reduced by evaporation in a tared capsule on a water-bath to 50 gm. (or 6¼ ounces av.), and when cold, enough syrup is to be added to make the product weigh 1000 gm. (or 12½ ounces av.). <U. S., p 388. F C F, p 793.

It will be noted that the present formula is entirely different than the former, which could not readily be prepared by ordinary druggists. Its sp. gr. should be about 1.313 at N T.

SYRUPUS ALLII. Syrup of Garlic. The present formula is: Fresh garlic, sliced and bruised, 200 gm. (or 2 ounces), sugar 800 gm. (or 8 ounces), diluted acetic acid a sufficient quantity to make 1000 Cc. (or 10 fl.ounces). The garlic is to be macerated with 300 Cc. (or 3 fl.ounces) of diluted acetic acid during 4 days, and the liquid then expressed, avoiding the use of metallic utensils. The residue is to be again macerated with 200 Cc. (or 2 fl.ounces) of diluted acetic acid, and the liquid expressed as before. The liquids are then to be mixed and filtered and the sugar dissolved

in the filtrate by agitation, and enough diluted acetic acid added to make the product measure 1000 Cc. (or 10 fl.ounces). <U S., p 388. F C F, p 793.

This may also be prepared by percolating the sugar with the acetic tincture, and adding enough dilute acetic acid through the percolator to make the required measure. The preparation is about the same as before.

SYRUPUS ALTHÆÆ. Syrup of Althæa. Althæa, cut into small pieces, 50 gm. (or 1 ounce av.), alcohol 30 Cc. (or 5 fl. drachms), glycerin 100 Cc. (or 2 fl.ounces), sugar 700 gm. (or 14½ ounces), water a sufficient quantity to make 1000 Cc. (or 20 fl. ounces). The althæa is first to be washed with cold water, and then macerated with 400 Cc. (or 8 ounces) of water, previously mixed with the alcohol, during 1 hour, frequently stirring. It is then to be strained without expressing the residue. The sugar is to be dissolved by agitation in the strained liquid, without heat, the glycerin added and then enough water to make the product 1000 Cc. (or 20 fl.ounces). <U. S., p 389. F C F, p 794.

This syrup, as made by the former formula, was very liable to ferment. The glycerin and alcohol are intended to prevent this.

SYRUPUS AMYGDALÆ. Syrup of Almond. Sweet almond 140 gm. (or 3 ounces av.), bitter almond 40 gm. (or ⅞ ounce av.), sugar 200 gm. (or 4¼ ounces av.), orange flower water 100 Cc. (or 2 fl.ounces), water 200 Cc. (or 4 fl.ounces), syrup a sufficient quantity to make 1000 Cc. (or 20 fl.ounces). In the present Pharm. the directions for making this syrup are evidently wrong or incomplete, as they do not correspond with the ingredients of the formula. We therefore give such directions as would seem to be intended, but think the old formula would be better. The almonds are to be blanched and rubbed in a mortar with 100 gm. (or 2 ounces) of sugar, and 30 Cc. (or ¾ fl.ounce) of water, to a smooth paste. This is to be mixed with the orange flower water, and 200 Cc. (or 4 fl.ounces) of water, and strained with strong expression. To the residue 100 Cc.(or 2 ounces) of water is to be added and the liquid expressed as before and added to the former product. This is to be strained and the sugar dissolved in the liquid, without heat, and enough syrup added to make the product measure 1000 Cc. (or 20 fl.ounces). <U. S., p 389. F C F, p 794.

SYRUPUS AURANTII. Syrup of Orange. The former Pharm. contemplated the use of dried sweet orange peel, while the new Pharm. directs the fresh peel, which is much to be preferred. Sweet orange peel, taken from the fresh fruit, 50 gm. (or 1 ounce),

precipitated calcium phosphate 50 gm. (or 1 ounce), sugar 700 gm. (or 14 ounces), alcohol and water, each, a sufficient quantity to made 1000 Cc. (or 20 fl.ounces). The orange peel should be freed as much as possible from the inner white layer, and cut into small pieces. It is of advantage also that it be pounded in a mortar to a pulpy mass. This is to be put into a flask which is to be stopped loosely with a notched stopper, 80 Cc (or 1⅝ fl.ounces) of alcohol added and heat applied by means of a water-bath until the alcohol boils, and continued thereafter for five minutes. The flask is then to be well stopped and set aside to cool. When cool the liquid is to be filtered off and the filter washed with alcohol until 100 Cc. (or 2 ounces) have passed. The precipitated calcium phosphate is to be mixed in a mortar with 150 gm.(or 3 ounces) of sugar, and the tincture added, with constant trituration. To the resulting mass 300 Cc. (or 6 ounces) of water are to be added, triturating constantly, and the whole is to be transferred to a filter, returning the first portions, if necessary, until it runs through clear. In the filtrate the remainder of the sugar is to be dissolved and enough water added through the filter to make the measure 1000 Cc. (or 20 fl.ounces). <U. S., p 390. F C F, p 795. It will be of advantage to make this syrup according to F C F, p 796, from oil of orange instead of the peel.

SYRUPUS AURANTII FLORUM. Syrup of Orange Flowers. Sugar 850 gm. (or 17½ ounces av.), orange flower water a sufficient quantity to make 1000 Cc. (or 20 fl.ounces). The sugar is to be dissolved in 450 Cc. (or 9 fl.ounces) of orange flower water, by agitation, without heat, and enough orange flower water then added to make the product measure 1000 Cc. (or 20 fl.ounces). This syrup may also be made by percolating the sugar with orange flower water until it is dissolved and 1000 Cc. (or 20 fl.ounces) are obtained. <U. S., p 390. F C F, p 796.

SYRUPUS CALCII LACTOPHOSPHATIS. Syrup of Calcium Lactophosphate. The present Pharm. formula is somewhat changed, phosphoric acid being used instead of hydrochloric, and water of ammonia omitted. Precipitated calcium phosphate 25 gm. (or 228 grains), lactic acid 60 Cc. (or 1.2 fl.ounces),phosphoric acid 36 Cc. (or 6 fl.drachms), orange flower water 25 Cc. (or 3.8 fl.drachms), sugar 700 gm. (or 14½ ounces av.), water a sufficient quantity to make 1000 Cc. (or 20 fl.ounces). The lactic acid is to be mixed with 100 Cc. (or 2 fl.ounces) of water contained in a capacious mortar, and the calcium carbonate is to be added, gradually,

in portions until it is dissolved. The phosphoric acid is then to be added and triturated until the precipitate at first formed is dissolved. Then 150 Cc. (or 3 fl.ounces) of water is to be added and the solution filtered, rinsing the mortar with 75 Cc. (or 1¼ fl. ounces) of water and passing the washings through the filter. The orange flower water is then to be added to the mixed filtrates and the sugar dissolved in the liquid by agitation, without heat. The syrup is then to be strained and enough water passed through the strainer to make 1000 Cc. (or 20 fl.ounces). <U. S., p 391. F C F, p 797.

SYRUPUS CALCIS. Syrup of Lime. Lime 65 gm. (or 1 ounce), sugar 400 gm. (or 6 ounces), water, a sufficient quantity to make 1000 Cc. (or 15 fl.ounces). The lime and sugar are to be triturated together in a mortar so as to form a homogeneous powder. The powder is then to be added to 500 Cc. (or 7½ fl.ounces) of boiling water contained in a bright copper or tinned iron vessel, and the mixture boiled for 5 minutes, stirring constantly. It is then to be strained, and the strained liquid diluted with an equal volume of water and filtered through white filtering paper. The filtrate is then to be evaporated in a tared capsule, to 700 gm. (or 10½ fl.ounces) and allowed to cool, and to it enough water added to make the product measure 1000 Cc. (or 15 fl.ounces). < U. S., p 391. F C F, p 798.

SYRUPUS FERRI IODIDI. Syrup of Ferrous Iodide. "A syrupy liquid containing about 10 per cent., by weight of Ferrous Iodide, (FeI_2), or about 13.4 gm. in 100 Cc." <U. S., p 392. F C F, p 800.

Iron, in the form of bright wire. and cut in small pieces, 25 gm. (or 386 grains), iodine 83 gm. (or 2 ounces av. + 405 grains), Syrup and distilled water, each, a sufficient quantity to make 1000 gm. (or 35 ounces av. + 48 grains). The iron is to be introduced into a thin flask having a capacity of about 500 Cc. (or 1 pint),and to it 150 Cc. (or 5 fl.ounces of distilled water is to be added, and afterwards the iodine. The mixture is to be shaken occasionally, checking the reaction if necessary by pouring cold water over the flask, and, when the solution has acquired a greenish color and has lost the odor of iodine, it is to be heated to boiling. It is then to be rapidly filtered through a double filter, placed in a funnel, the lower orifice of which dips below the surface of 600 gm. (or 21 ounces av. + 72 grains) of syrup, contained in a tared vessel. When the solution has filtered, wash the flask and filter with

a mixture of 25 Cc. (or 6¾ fl.drachms) each, of distilled water and syrup, previously heated to nearly 100°C. (212°F.). The funnel is then to be withdrawn, and enough syrup added to make the product weigh 1000 gm. (or 35 ounces av. + 48 grains). The syrup should be kept in small well-stoppered and completely filled bottles. <U. S., p 392. F C F, p 800.

The sp. gr. of this syrup is about 1.353 at N T.

SYRUPUS FERRI QUININÆ ET STRYCHNINÆ PHOSPHATUM. Syrup of the Phosphates of Iron, Quinine, and Strychnine. The present formula differs considerably from the 1880. Quinine sulphate is used instead of the alkaloid, glycerin is added, and the quantity of phosphoric acid directed is much less because of the increased acid strength of the new Pharm. preparation. The proportion of iron and quinine are also increased and of strychnine slightly decreased.

Soluble ferric phosphate 20 gm. (or 182 grains), quinine sulphate 30 gm. (or 273 grains), Strychnine 0.2 gm. (or 1.8 grains), phosphoric acid, (1890) 48 Cc. (or 1 fl.ounce — 20 minims), glycerin 100 Cc. (or 2 fl.ounces), water 50 Cc. (or 1 fl.ounce), syrup, a sufficient quantity to make 1000 Cc. (or 20 fl.ounces). The soluble ferric phosphate is to be dissolved in the water, in a porcelain capsule, by the aid of heat. The phosphoric acid is then to be added, then the quinine sulphate and strychnine, and the mixture is to be stirred until they are dissolved. The solution is then to be filtered into the glycerin, contained in a graduated bottle, and enough syrup added to make up the volume to 1000 Cc. (or 20 fl. ounces). The syrup is to be strained if necessary. <U. S., p 393 F C F, p 802.

SYRUPUS HYPOPHOSPHITUM. Syrup of Hypophosphites. This is the old "Compound Syrup of Hypophosphites of Lime, Soda and Potassa." wkich was formerly much used under the quoted title, and was also known as "Churchill's Syrup of Hypophosphites Compound." At present, compound syrups of hypophosphites containing quinine and strychnine are more generally used but no official formula is given. <F C F.

Calcium hypophosphite 45 gm. (or 1 ounce av. + 258 grains), potassium hypophosphite 15 gm. (or 231 grains), sodium hypophosphite 15 gm. (or 231 grains), sugar 500 gm, (or 17⅝ ounces av.), diluted hypophosphorous acid 2 gm. (or 31 grains), spirit of lemon 5 Cc. (or 82 minims), water, a sufficient quantity to make 1000 Cc. (or 33⅞ fl.ounces). The hypophosphites are to be mixed

and triturated with 450 Cc. (or 15 ounces) of water until they are dissolved, the spirit of lemon, and the hypophosphorous acid are then to be added and the liquid filtered. The sugar is to be dissolved in the filtrate, by agitation, without heat, and enough water added through the filter to make the measure 1000 Cc. (or $33\frac{7}{8}$ fl. ounces). This syrup may also be made by percolating the sugar with the filtered liquid, and adding enough water through the percolator to make the required measure. <U. S., p 393. F C F, p 803.—<also p 834 to 838.

SYRUPUS HYPOPHOSPHITUM CUM FERRO. Syrup of Hypophosphites with Iron. In the present formula, citrate of potassium is added, which covers the disagreeable ferrugenous taste of the iron salt.

Ferrous lactate 10 gm. (or 57 grains), potassium citrate 10 gm. (or 57 grains), syrup of hypophosphites, a sufficient quantity to make 1000 Cc. (or 12½ fl.ounces). The ferrous lactate and potassium citrate are to be rubbed together with a small quantity of syrup gradually added, until they are dissolved. The solution is to be strained and enough syrup of hypophosphites added through the strainer to make the product measure 1000 Cc. (or 12½ fl. ounces). <U. S., p 394. F C F, p 804. This syrup should be freshly made when wanted.

SYRUPUS IPECACUANHÆ. Syrup of Ipecac. Fluid extract of Ipecac 70 Cc. (or 1 fl.ounce + 80 minims), acetic acid 10 Cc. (or 76 minims), glycerin 100 Cc. (or 1⅔ fl.ounces), sugar 700 gm. (or 12⅓ ounces av.). water, a sufficient quantity to make 1000 Cc. (or 17 fl.ounces). The fluid extract of ipecac is to be diluted with 300 Cc. (or 5 fl.ounces) of water to which the acetic acid has previously been added, and well mixed by shaking. The mixture is then to be filtered and enough water poured through the filter to make the measure 500 Cc. (or 8½ fl.ounces). To this the glycerin is to be added and the sugar dissolved in the mixture; finally, adding enough water to make the product measure 1000 Cc. (or 17 fl. ounces). U. S., p 394. F C F, p 805.

It will be noted that this formula is entirely different than in the 1880 Pharm. which was simply 5 parts, by weight, of fluid extract of ipecac mixed with 95 parts by weight, of syrup. The fluid extract of the present Pharm. is made in an entirely different manner than the 1880 preparation and retains the resinous matter in solution. In the syrup, as above made this is partly dissolved by the acetic acid, and partly removed by filtration after the addition of the water. The glycerin which is added helps to hold some of the constituents of the ipecac in solution, but mainly acts as a preservative for this syrup which is always ready to ferment. The Pharm.

also adds that this syrup may be made by percolation in the manner directed under *syrupus.*

SYRUPUS KRAMERIÆ. Syrup of Krameria. The formula for this syrup is about the same as in the 1880 Pharm., except that metric measure is substituted for parts by weight. Fluid extract of krameria 450 Cc. (or 4½ fl.ounces), syrup 550 Cc. (or 5½ fl. ounces). They are to be well mixed together. <U. S., p 395. F C F, p 806.

SYRUPUS LACTUCARII. Syrup of Lactucarium. Tincture of lactucarium 100 Cc. (or 2 fl.ounces), precipitated calcium phosphate 50 gm. (or 1 ounce), sugar 750 gm. (or 14½ ounces), water, a sufficient quantity to make 1000 Cc. (or 20 fl.ounces). The calcium phosphate is to be mixed with 150 gm. (or 3 ounces) of the sugar in a mortar and triturated with the tincture of lactucarium, gradually added, and afterwards with 300 Cc. (or 6 fl. ounces) of water added in small portions at a time. The mixture is then to be filtered, the remainder of the sugar dissolved in the filtrate and enough water passed through the filter and added to the syrup to make the measure 1000 Cc. (or 20 fl.ounces). This may also be made by percolating the sugar with the filtered liquid as directed under *syrupus.* <U. S., p 395. F C F, p 806.

It will be noted that the present formula is entirely different than the 1880, which directed fluid extract of lactucarium 5 parts, by weight, to be mixed with syrup 95 parts. Fluid extract of lactucarium is now dismissed from the official list. The present formula makes a good preparation, but we would prefer to use magnesium carbonate instead of the precipitated calcium phosphate.

SYRUPUS PICIS LIQUIDÆ. Syrup of Tar. Tar 75 gm. (or 2¼ ounces), water 150 Cc. (or 4½ fl.ounces), boiling distilled water 400 Cc. (or 12 fl.ounces), glycerin 100 Cc. (or 3 fl.ounces), sugar 800 gm. (or 25 ounces av.), distilled water, a sufficient quantity to make 1000 Cc. (or 30 fl.ounces). The tar is to be intimately mixed with about 100 gm. (or 3 ounces) of white sand, the water is to be poured upon it and stirred frequently during 12 hours, then poured off and thrown away. The boiling water is then to be poured upon the residue and well stirred frequently, during 15 minutes; the glycerin is then to be added and the vessel covered and set aside for 24 hours, stirring occasionally. The clear solution is then to be decanted and filtered, and the sugar dissolved in the filtrate by the aid of heat; the syrup is then to be strained and enough distilled water passed through the strainer to make the measure 1000 Cc. (or 30 fl.ounces). <U. S., p 396. F C F, p 809.

We would suggest that pine sawdust is preferable to the sand for mixing with the tar. <F C F, p 810. The glycerin acts as a preservative, and is a good addition.

SYRUPUS PRUNI VIRGINIANÆ. Syrup of Wild Cherry. In this preparation the present formula increases the percentage of glycerin to 15 per cent., by volume, which is nearly 4 times as much as before, this is an advantage as it helps to preserve the syrup from fermentation, and also to hold the astringent constituents in solution.

Wild cherry, in No. 20 powder, 150 gm. (or 7½ ounces av.), sugar 700 gm. (or 35 ounces av.), glycerin 150 Cc.(or 7¼ fl.ounces) water, a sufficient quantity to make 1000 Cc. (or 48 fl.ounces). The glycerin is to be mixed with 300 Cc. (or 15 ounces) of water, and the wild cherry moistened with a sufficient quantity of the mixture and macerated for 24 hours in a close earthenware vessel. It is then to be packed firmly in a percolator, the remainder of the menstruum poured upon it and when it has disappeared from the surface, followed by the water until 450 Cc. (or 22 fl.ounces) of the percolate is obtained. The sugar is to be dissolved in the percolate without heat. The syrup is then to be strained, and enough water passed through the strainer to make the measure 1000 Cc. (or 48 fl.ounces). It may also be prepared by percolating the sugar with the liquid as directed under *syrupus*. <U. S., p 396. F C F, p 810.

SYRUPUS RHEI. Syrup of Rhubarb. The present Pharm. directs fluid extract of rhubarb and spirit of cinnamon, instead of rhubarb (root) and cinnamon (bark). Glycerin, 5 per cent., is also added, and syrup used in place of sugar, the formula is therefore entirely different from the 1880.

Fluid extract of rhubarb 100 Cc. (or 3 fl.ounces), spirit of cinnamon 4 Cc. (or 55 minims), potassium carbonate 10 gm. (or 137 grains) glycerin 50 Cc. (or 1½ fl.ounces), water 50 Cc. (or 1½ fl. ounces), syrup a sufficient quantity to make 1000 Cc. (or 30 fl. ounces). The spirit of cinnamon is to be mixed with the fluid extract and the potassium carbonate dissolved in the water and added to the mixture. Then the glycerin is added and enough syrup to make the measure 1000 Cc. (or 30 fl.ounces). <U. S., p 397. F C F, p 812.

SYRUPUS RHEI AROMATICUS. Aromatic Syrup of Rhubarb. This preparation remains practically unchanged, except by the substitution of metric measure for parts, by weight.

Aromatic tincture of rhubarb 150 Cc. (or 3 fl.ounces), syrup 850 Cc. (or 17 fl.ounces). They are to be thoroughly mixed.

SYRUPUS ROSÆ. Syrup of Rose. This syrup remains the same except the substitution of metric measure for parts by weight, Fluid extract of rose 125 Cc. (or 1¼ fl.ounces), syrup 875 Cc. (or 8¾ fl.ounces). They are to be mixed. <U. S., p 397. F C F, p 814.

SYUPUS RUBI. Syrup of Rubus. (Blackberry). This syrup remains unchanged. Fluid extract of rubus 250 Cc. (or 1 fl.ounce), syrup 750 Cc. (or 3 fl.ounces). They are to be well mixed. <U. S., p 398. F C F, p 814.

SYRUPUS RUBI IDÆI. Syrup of Raspberry. This is the same as before. Fresh, ripe (red) raspberries, any convenient quantity, sugar a sufficient quantity. The raspberries are to be reduced to a pulp and allowed to stand at a temperature of about 20° C. (68° F.) until a small portion of the filtered juice mixes clear with half its volume of alcohol. The juice is then to be separated by pressure and set aside in a cool place until the liquid portion has become clear; and then it is to be filtered, and to every 40 parts, by weight, of the filtrate 60 parts of sugar is added, the mixture heated to boiling and strained. The sugar should be added as soon as possible after the juice is filtered, and no metallic vessel should be employed; stone ware crocks or granite ware vessels should be used, and, when made, the syrup should be kept in well-filled and well-stoppered small bottles in a cool place. <U. S., p 398. F C F, p 815.

SYRUPUS SARSAPARILLA COMPOSITUS. Compound Syrup of Sarsaparilla. The formula in the present Pharm. is very much changed. Fluid extract of sarsaparilla, glycyrrhiza and senna are used, and oil of sassafras, anise and gaultheria instead of the drugs. Guaiacum and pale rose are omitted, and the proportions of the ingredients considerably changed. The present formula is:

Fluid extract of sarsaparilla 200 Cc. (or 6¾ fl.ounces), fluid extract of glycyrrhiza 15 Cc. (or ½ fl.ounce), fluid extract of senna 15 Cc. (or ½ fl.ounce), sugar 650 gm. (or 23 ounces av.), oil of sassafras 0.1 (or 2 minims), oil of anise 0.1 Cc. (or 2 minims), oil of gaultheria 0.1 Cc. (or 2 minims). Water a sufficient quantity to make 1000 Cc. (or 34 fl.ounces). The fluid extracts are to be mixed and the oils added. Enough water is then to be added to the mixture to make the measure 600 Cc. (or 20 fl.ounces); the

mixture is to be well shaken and, after standing an hour, filtered; the sugar dissolved in the filtrate by aid of gentle heat and the syrup strained, adding enough water through the strainer to make the product measure 1000 Cc. (or 34 fl.ounces). <U. S., p 398. F C F, p 815.

It is the custom with many druggists to prepare their syrup sarsaparilla compound from the fluid extract of sarsapari la compound, either made by themselves or bought of manufacturers, but it will be seen by comparing the formulas, that the resultant preparation will not be like the official syrup.

SYRUPUS SCILLÆ. Syrup of Squill. The formula of the new Pharm. is unchanged except by the substitution of metric weight and measure for parts.

Vinegar of squill 450 Cc. (or 15¼ fl.ounces), sugar 800 gm. (or 28¼ ounces av.), water a sufficient quantity to make 1000 Cc. (or 34 fl.ounces). The vinegar of squill is to be heated to the boiling point in a glass or porcelain vessel, and the liquid filtered while it is hot. The sugar is to be dissolved in the hot filtrate by agitation and without further heating, the syrup strained and enough water passed through the strainer to make the measure 1000 Cc. (or 34 fl.ounces). <U. S., p 399. F C F, p 817.

SYRUPUS SCILLÆ COMPOSITUS. Compound Syrup of Squill. This preparation is familiarly known as "hive syrup." In the present formula fluid extract of squill and senega are used in place of the drugs, making it, therefore, entirely different than in the former revision.

Fluid extract of squill 80 Cc. (or 2¾ fl.ounces), fluid extract of senega 80 Cc. (or 2¾ fl.ounces), antimony and potassium tartrate 2 gm. (or 31 grains), precipitated calcium phosphate 10 gm. (or 154 grains), sugar 750 gm. (or 26½ ounces av.), water a sufficient quantity to make 1000 Cc. (or 34 fl.ounces). The fluid extracts are to be mixed and evaporated in a tared capsule, on a water-bath to 100 gm. (or 3½ ounces av.). The residue is to be mixed with 350 Cc. (or 12 fl.ounces) of water. When cold the precipitated calcium phosphate is to be added and well mixed, and the mixture filtered, passing enough water through the filter to make the measure 400 Cc. (or 13½ fl.ounces). The antimony and potassium tartrate is to be dissolved in 25 Cc. (or about 1 ounce) of hot water and added to the filtrate. In this liquid the sugar is then to be dissolved by agitation, without heat, and the syrup stained, adding through the strainer enough water to make the product measure 1000 Cc. (or 34 fl.ounces). <U. S., p 399. F C

F, p 817. This may also be prepared by percolating the sugar with the liquid as directed under *syrupus*.

SYRUPUS SENEGÆ. Syrup of Senega. Fluid extract of senega 200 Cc. (or 4 fl.ounces), ammonia water 5 Cc. (or 46 minims), sugar 700 gm. (or 14⅝ ounces av.), water a sufficient quantity to make 1000 Cc. (or 20 fl.ounces). The fluid extract of senega is to be mixed with 300 Cc. (or 6 fl.ounces) of water, and the ammonia water and the mixture set aside for a few hours. It is then to be filtered and enough water passed through the filter to make the measure 550 Cc. (or 11 fl.ounces). The sugar is to be dissolved in the filtrate by agitation, without heat, the syrup strained and enough water added through the strainer to make the measure 1000 Cc. (or 30 fl.ounces). This may also be made by percolating the sugar with the filtered liquid as directed under *syrupus*. <U. S., p 400. F C F, p 818.

SYRUPUS SENNÆ. Syrup of Senna. The present formula is: Senna (Alexandria) bruised 250 gm. (or 5¼ ounces av.), oil of coriander 5 Cc. (or 45 minims), alcohol 150 Cc. (or 3 fl.ounces), sugar 700 gm. (or 14⅝ ounces av.), water a sufficient quantity to make 1000 Cc. (or 20 fl.ounces). Upon the senna, boiling water, 14 fl.ounces is to be poured and it is to be digested at a temperature not exceeding 60° C. (140° F.), during 24 hours. The liquid is then to be expressed and enough water passed through the residue to make 600 Cc. (or 12 fl.ounces) of liquid. This is to be strained and when cold the alcohol in which the oil of coriander has been dissolved, is to be added and the mixture set aside until the precipitate has subsided. The clear liquid is then to be poured off and the remainder filtered, and enough water passed through the filter to make 550 Cc. (or 11 fl.ounces). In this the sugar is to be dissolved, by agitation, without heat, the syrup is then to be strained and enough water added through the strainer to make the measure 1000 Cc. (or 20 fl.ounces). <U. S., p 400. F C F, p 819.

It will be noted that the present preparation is only about one-half the strength of senna, as the 1880 Pharm., which was 33 parts, by weight; also that Alexandria senna is designated. This syrup is usually prepared extemporaneously by druggists, and the present preparation may be readily made by mixing 1 fl.ounce of fluid extract of senna with 3 fl.ounces of syrup.

SYRUPUS TOLUTANUS. Syrup of Tolu. The 1880 formula for this syrup was very unsatisfactory, and the present formula is entirely changed as follows:

Balsam of tolu 10 gm. (or 155 grains), precipitated calcium phosphate 60 gm. (or 1¾ ounces av.), sugar 850 gm. (or 30 ounces av.), alcohol 50 Cc. (or 1⅝ fl.ounces), water a sufficient quantity to make 1000 Cc. (or 34 fl.ounces). The balsam of tolu is to be dissolved in the alcohol, in a small flask, by the aid of gentle heat. The precipitated calcium phosphate is to be mixed with 150 gm. (or 5 ounces) of the sugar in a mortar, the solution of balsam added and thoroughly incorporated, and the mixture set aside in a warm place until the alcohol has evaporated. The residue in the mortar is then to be triturated with 500 Cc. (or 17 fl.ounces) of water, gradually added, and then filtered through a wetted filter, returning the first portions until it runs clear. The filtrate is then to be heated to a temperature of about 60° C. (140° F.), the remainder of the sugar added and dissolved by agitation. The syrup is then to be strained, and when cool, enough water added through the strainer to make the measure 1000 Cc. (or 34 fl.ounces) Or the sugar may be percolated with the filtered liquid as directed under *syrupus*. <U. S., p 401. F C F, p 820.

The present formula is practically the same as that of the 1870 Pharm. except that precipitated phosphate of calcium is used instead of magnesium carbonate. The 1870 formula made a very fine preparation and, in our opinion. the magnesium carbonate is preferable to the calcium carbonate,only 2 drachms being required for about the same quantity of syrup.

SYRUPUS ZINGIBERIS. Syrup of Ginger. This syrup as made by the 1880 formula was very unsatisfactory because it made a cloudy preparation and the resinous matter of the ginger formed a scum on the surface after standing. The present formula makes a clear syrup.

Fluid extract of ginger 30 Cc. (or 1 fl.ounce), precipitated calcium phosphate 15 gm. (or 230 grains), sugar 850 gm. (or 30 ounces av.), water, a sufficient to make 1000 Cc. (or 34 fl.ounces). The fluid extract of ginger is to be triturated with the precipitated calcium phosphate in a mortar and the mixture exposed in a warm place until the alcohol has evaporated. The residue in the mortar is then to be triturated with 450 Cc. (or 15 fl.ounces) of water and filtered. The sugar is to be dissolved in the filtrate by agitation, without heat. The syrup is to be strained and enough water passed through the strainer to make the measure 1000 Cc. (or 34 fl.ounces). Or the sugar may be percolated with the filtered liquid as directed under *syrupus*. <U. S., p 402. F C F, p 821.

The present syrup of ginger is only about half the strength of the former official. Carbonate of magnesium, instead of calcium phosphate was used in the 1870 formula, and made a good preparation.

TAMARINDUS. Tamarind. "The preserved pulp of the fruit of *Tamarindicus indica*." <U. S., p 402.

This is used in making confection of senna, and has been considerably employed in making various proprietary laxative confections.

TEREBENUM. Terebene. $C_{10}H_{16}$. *new.* "A liquid consisting chiefly of pinene, and containing not more than very small proportions of Terpinene and Dipentine." <U. S., p 403. F C F, p 651.

This is described as "a colorless or slightly yellowish, thin liquid, having a rather agreeable, thyme-like odor, and an aromatic, somewhat terebinthinate taste."

Its sp. gr. is about 0,862 at N T. It boils at 156° to 160°C. (312° to 320°F.). It is given as an expectorant in coughs and bronchitis 4 to 6 drops or more on sugar or in an emulsion or tablets; also in the form of hot vapor. Externally it is applied as a stimulating dressing for sores, in a 5 per cent. aqueous solution, or a 5 or 10 per cent. ointment.

TERPINI HYDRAS. Terpin Hydrate. $C_{10}H_{18}(OH)_2+H_2O$. *new.* "The hydrate of the diatomic alcohol Terpin." <U. S., p 404.

This is described as "colorless, lustrous, rhombic prisms, nearly odorless, and having a slightly aromatic and somewhat bitter taste."

It is soluble in about 250 parts of water and in 10 parts of alcohol. It melts at 116° to 117°C. (240 8° to 242.6°F.) with loss of water and at the temperature of boiling water sublimes in fine needles. It is used as an expectorant in doses of 2 to 3 grains, and in renal affections as a stimulant to the mucous membrane, in doses of 5 to 6 grains. It is also prescribed for whooping cough. It may conveniently be given in the form of pills or tablets.

THYMOL. Thymol. $C_{10}H_{14}O$. "A phenol occuring in the volatile oils of *Thymus vulgaris*, *Monarda punctata* and *Carum Ajowan*." <U. S., p 405. F C F, p 651.

Its sp. gr. as a solid is 1.069 at N T. but when melted it is lighter than water. It melts at 50°C. (122°F.), remaining fluid at a considerably lower temperature. It is soluble in 1200 parts of water and in less than its own weight of alcohol, ether or chloroform. It is also soluble in glacial acetic acid and oils. When triturated with camphor or with chloral, it liquifies.

TINCTURÆ. Tinctures. In the new Pharm. three tinctures have been added, *Tinctura Lactucarii*, *Tinctura Quillajæ* and *Tinctura Strophanthi*, and three dismissed; *Tinctura Conii*, *Tinctura Ferri Acetatis* and *Tinctura Ignatii*, while one, *Tinctura Saponis Viridis* has been transferred to the liniments and now bears the name *Linimentum Saponis Mollis*.

The changes in the formulas for tinctures are greater than in any other class of preparations, for, besides the change from parts by weight, (as in the 1880 Pharm.), to metric weight and measure, the change in the standard of diluted alcohol to equal parts, by volume, of alcohol and water instead of equal parts by weight, must necessarily be taken into account. There are also many additions and changes in the ingredients composing the preparations which will be duly noted under the formulas in which they are introduced. Most tinctures are advantageously made by water-bath percolation.

TINCTURA ACONITI. Tincture of Aconite. The present formula is: Aconite, in No. 60 powder, 350 gm. (or 12 ounces av), alcohol and water, each, a sufficient quantity to make 1000 Cc. (or 32¾ fl.ounces). Alcohol 7 volumes, with water 3 volumes are to be mixed and the powder moistened with 200 Cc. (or 6¾ fl. ounces) of the mixture, and allowed to macerate for 24 hours. It is then to be packed firmly in a percolator and the menstruum gradually poured upon it until 1000 Cc. (or 32¾ fl.ounces) of the tincture are obtained. <U. S., p 405. F C F, p 882.

The proportion of the drug is slightly increased. In the 1880 Pharm. about 50 grains of tartaric acid was used with the above quantity, and alcohol, without dilution, was used as the menstruum.

TINCTURA ALOES. Tincture of Aloes. Purified aloes, in moderately fine powder, 100 gm. (or 3½ ounces av.), liquorice root, in No. 40 powder, 200 gm. (or 7 ounces av.), diluted alcohol a sufficient quantity to make 1000 Cc. (or 33¾ fl.ounces). The powders are to be mixed, moistened with 80 Cc. (or 3 fl.ounces) of diluted alcohol and allowed to macerate for 24 hours. The mixture is then to be packed firmly in a percolator and diluted alcohol gradually poured upon it until 1000 Cc. (or 33¾ fl.ounces) of tincture are obtained. <U. S., p 406. F C F, p 883.

In the 1880 Pharm.extract of glycyrrhiza the same quantity as of the aloes was directed to be used, and the tincture made by maceration (for 7 days) instead of by percolation.

TINCTURA ALOES ET MYRRHÆ. Tincture of Aloes and Myrrha. The present formula is: Purified aloes 100 gm. (or 3 ounces av.), myrrh 100 gm. (or 3 ounces av.), liquorice root, in No. 40 powder, 100 gm. (or 3 ounces av.), alcohol and water, each, a sufficient quantity to make 1000 Cc. (or 28¾ fl.ounces). Alcohol 3 volumes, with water 1 volume, are to be mixed, and the aloes, myrrh and liquorice root having been reduced to a moderately coarse (No. 40) powder, is to be moistened with 60 Cc. (or 2 ounces) of the menstruum and allowed to macerate for 24 hours. It is then to be moderately packed in a percolator and the menstruum gradually poured upon it until 1000 Cc. (or 28¾ fl.ounces) of the tincture are obtained. <U. S., p 406. F C F, p 884.

This is the old and well known *Elixir Proprietatis.* In the former Pharm. liquorice root was not directed, and the preparation was made by maceration (for 7 days), instead of by percolation. The addition of the liquorice helps to mask the intensly bitter taste of the aloes, and also to separate the gums so that they will not mass and hinder percolation. After all, in our opinion, this, and the foregoing, would better be made by macerating in the old way.

TINCTURA ARNICÆ FLORUM. Tincture of Arnica Flowers. Arnica flowers, in No. 20 powder, 200 gm. (or 7 ounces av.), diluted alcohol a sufficient quantity to make 1000 Cc. (or 34 fl.ounces). The powdered arnica flowers are to be firmly packed in a cylindrical percolator and diluted alcohol poured upon them until 100 Cc. (or 34 fl.ounces) of tincture are obtained. <U. S., p 406. F C F, p 885.

The formula is the same as before except that metric weight and measure are used instead of parts, and that the diluted alcohol is weaker. The arnica may be reduced to a coarse powder by rubbing through a sieve, and it must be very firmly packed

TINCTURÆ ARNICÆ RADICIS. Tincture of Arnica Root. Arnica root, in No. 40 powder, 100 gm. (or 3 ounces av.), alcohol and water, each, a sufficient quantity to make 1000 Cc. (or 28¾ fl.ounces). Alcohol 6½ volumes with water 3½ volumes are to be mixed as a menstruum, the powder moistened with 150 Cc. (or 4½ fl.ounces) of the liquid, and macerated for 24 hours. It is then to be packed moderately in a percolator and the menstruum gradually poured upon it until 1000 Cc. (or 28¾ fl.ounces) of the tincture are obtained. <U. S., p 407. F C F, p 886.

It is somewhat confusing to have a tincture of both the flowers and the root of arnica, and it should be remembered that when "Tincture of Arnica" is called for or prescribed, the tincture of arnica flowers is generally wanted. But few customers, and but few physicians, even, know that there are two tinctures of arnica, and they are generally familiar with the tincture of arnica flowers, only, which is double the strength of tincture of arnica root.

TINCTURA ASAFŒTIDÆ. Tincture of Asafetida. Asafetida bruised 200 gm. (or 1 ounce av.), alcohol a sufficient quantity. The asafetida is to be mixed with 800 Cc. (or 8 fl.ounces) of alcohol and macerated in a close vessel, with frequent agitation, for 7 days. The mixture is then to be filtered and enough alcohol added through the filter to make the measure 1000 Cc. (or 9⅝ fl.ounces).

The formula is the same as before, except metric weight and measure are used instead of parts.

TINCTURA AURANTII AMARI. Tincture of Bitter Orange Peel. Bitter orange peel, in No. 30 powder, 200 gm. (or 7 ounces av), alcohol and water, each, a sufficient quantity to make 1000 Cc. (or 33¾ fl.ounces). Alcohol 3 volumes with water 2 volumes are to be mixed as a menstruum and the powder moistened with 200 Cc. (or 7 fl.ounces) of the liquid and macerated for 24 hours. It is then to be packed moderately in a percolator and the menstruum gradually poured upon it until 1000 Cc. (or 33¾ fl.ounces) of tincture are obtained. <U. S., p 407. F C F, p 887.

The 1880 Pharm. directed diluted alcohol to be used as a menstruum, and parts by weight.

TINCTURA AURANTII DULCIS. Tincture of Sweet Orange Peel. Sweet orange peel, taken from the fresh fruit, 200 gm. (or 7 ounces av.), alcohol a sufficient quantity to make 1000 Cc. (or 33¾ fl.ounces). The orange peel should be as free from the inner white layer as possible, and should be cut into small pieces and macerated for 24 hours with 800 Cc. (or 27 fl.ounces) of alcohol. It is then to be packed in a conical percolator and alcohol gradually poured upon it until 1000 Cc. (or 33¾ fl.ounces) of tincture are obtained. <U. S., p 408. F C F, p 888.

This tincture is used chiefly for flavoring and as there is great difference in oranges, they should be selected particularly with reference to the quantity and quality of oil in the peel. The white inner layer should be mostly cut away, and the peel cut fine, which is best done by chopping in a chopping bowl. It is then put in a wide mouth jar, and the bowl rinsed out with alcohol, which is to be added in the jar, and frequently agitated during the 24 hours, or more while it is macerating.

TINCTURA BELLADONNÆ FOLIORUM. Tincture of Belladonna Leaves. TINCTURA BELLADONNÆ, PHARM. 1880. Belladonna leaves, in No. 60 powder, 150 gm. (or 5 ounces av. + 125 grains), diluted alcohol a sufficient quantity to make 1000 Cc. (or 33¾ fl.ounces).

The powder is to be moistened with 200 Cc. (or 6¾ fl.ounces) of diluted alcohol, and macerated for 24 hours. It is then to be packed firmly in a percolator and diluted alcohol poured upon it until 1000 Cc. (or 33¾ fl.ounces) of tincture are obtained. <U. S., p 408. F C F, p 889.

TINCTURA BENZOINI. Tincture of Benzoin. Benzoin, in moderately coarse powder, 200 gm. (or 3½ ounces av.), alcohol a sufficient quantity to make 1000 Cc. (or 17 fl.ounces).

The powder is to be macerated with 800 Cc. (or 25 fl.ounces) of alcohol in a close vessel, with frequent agitation, for seven days and then filtered, adding through the filter enough alcohol to make 1000 Cc. (or 17 fl.ounces). <U. S., p 408. F C F, p 889.

As the former Pharm. directed this to be made in the same proportion, parts, by weight, the present preparation is about 15 per cent. stronger.

TINCTURA BENZOINI COMPOSITA. Compound Tincture of Benzoin. The present formula is the same as heretofore except that metric weight and measure are directed instead of parts by weight, which increases the strength of the present preparation about 15 per cent. Benzoin, in coarse powder, 120 gm. (or 3

ounces av.), purified aloes, in coarse powder, 20 gm. (or ½ ounce av.), storax 80 gm. (or 2 ounces av.), balsam of tolu 40 gm. (or 1 ounces av.), alcohol a sufficient quantity to make 1000 Cc. (or 24 fl.ounces).

The gums, balsams, ets., are to be digested with 800 Cc. (or 20 fl.ounces) of alcohol, at a temperature not exceeding 65° C. (149° F.), for two hours in a closed vessel; then filtered through paper and enough alcohol added through the filter to make the tincture, when cold, measure 1000 Cc. (or 24 fl.ounces). <U. S., p 409. F C F, p 890.

TINCTURA BRYONIÆ. Tincture of Bryonia. Bryonia, recently dried and in No. 40 powder, 100 gm. (or 2 ounces av.), alcohol a sufficient quantity to make 1000 Cc. (or 19⅕ fl.ounces).

The powder is to be moistened with 100 Cc. (or 1 ounce) of alcohol and macerated for 24 hours, then packed firmly in a percolator and alcohol gradually poured upon it until 1000 Cc. (or 19⅕ fl.ounces) of tincture are obtained.

TINCTURA CALENDULÆ. Tincture of Calendula. In the present formula alcohol is directed, but in the 1880 diluted alcohol was used. The calendula of the 1880 Pharm. was "the fresh, flowering herb," while the calendula of the present Pharm. is "the florets of *Calendula officinalis*." The formula now is: Calendula, in No. 20 powder, 200 gm. (or 7 ounces av.), alcohol a sufficient quantity to make 1000 Cc. (or 33¾ fl.ounces).

The calendula is to be moistened with 200 Cc. (or 6¾ fl.ounces) of alcohol and macerated for 24 hours, then packed firmly in a percolator, and alcohol gradually poured upon it until 1000 Cc. (or 33¾ fl.ounces) of tincture are obtained.

This tincture is, almost entirely, used externally like tincture of arnica, as an application for cuts, wounds, bruises, etc., and it would seem that, unless much diluted, the alcoholic menstruum would be too strong. A good tincture may be made with diluted alcohol, and would, we think, give better general satisfaction.

TINCTURA CALUMBÆ. Tincture of Calumba. Calumba, in No. 20 powder, 100 gm. (or 3¼ ounces av.), alcohol and water, each, a sufficient quantity to make 1000 Cc. (or 32 fl.ounces).

Alcohol 3 measures with water 2 measures are to be mixed as a menstruum. The calumba is to be moistened with 100 Cc. (or 3 ounces) of the liquid and macerated for 24 hours. It is then to be packed in a percolator and the menstruum gradually poured upon it until 1000 Cc. (or 32 fl.ounces) of tincture are obtained. <U. S., p 410. F C F, p 892.

TINCTURA CANNABIS INDICA. Tincture of Indian Cannabis. Indian cannabis, in No. 40 powder, 150 gm. (or 5 ounces av.), alcohol a sufficient quantity to make 1000 Cc. (or 32 fl.ounces).

The powder is to be moistened with 150 Cc. (or 5 fl.ounces) of alcohol, and macerated for 24 hours. It is then to be packed firmly in a percolator and alcohol gradually poured upon it until 1000 Cc. (or 32 fl.ounces) of tincture are obtained. <U. S., p 410 F C F, p 893.

TINCTURA CANTHARIDIS. Tincture of Cantharides. Cantharides, in No. 60 powder, 50 gm. (or 1 ounce av.), alcohol a sufficient quantity to make 1000 Cc. (or 19⅕ fl.ounces).

The powder is to be moistened with 30 Cc. (or ¾ fl.ounce) of alcohol and packed firmly in a percolator; alcohol is then to be gradually poured upon it until 1000 Cc. (or 19⅕ fl.ounces) of tincture are obtained. <U. S., p 410. F C F, p 894.

Owing to the small proportion of drug used, this can readily be made by maceration instead of by percolation.

TINCTURA CAPSICI. Tincture of Capsicum. Capsicum, in No. 30 powder, 50 gm. (or 1 ounce av.), alcohol and water, each, a sufficient quantity to make 1000 Cc. (or 19⅕ fl.ounces). Alcohol in the proportion of 950 Cc. (or 19 fl.ounces), with water 50 Cc. (or 1 fl.ounce) are to be mixed as a menstruum.

The capsicum is to be moistened with the liquid, packed firmly in a percolator, and the menstruum gradually poured upon it until 1000 Cc. (or 19⅕ fl.ounces) of the tincture are obtained.

Owing to the small proportion of the drug this tincture may readily be made by macerating it with the required quantity of the menstruum in a close vessel, for 7 days, then filtering and adding enough menstruum through the filter to make the required quantity.

TINCTURA CARDAMOMI. Tincture of Cardamom. Cardamom, in No. 30 powder, 100 gm. (or 2 ounces av.), diluted alcohol a sufficient quantity to make 1000 Cc. (or 19⅕ fl.ounces).

The cardamom is to be moistened with diluted alcohol 100 Cc. (or 2 fl.ounces), macerated for 24 hours, then packed firmly in a percolator and diluted alcohol gradually poured upon it until 1000 Cc. (or 19⅕ fl.ounces) of the tincture are obtained.

TINCTURA CARDAMOMI COMPOSITA. Compound Tincture of Cardamom. Cardamom 20 gm. (or 310 grains), cassia cinnamon 20 gm. (or 310 grains), caraway 10 gm. (or 155 grains), cochineal 5 gm. (or 77 grains), glycerin 50 Cc. (or 1⅔ fl.ounces), diluted alcohol a sufficient quantity to make 1000 Cc. (or 34 fl. ounces).

The seeds, etc., are to be mixed and reduced to a moderately coarse (No. 40) powder, and moistened with 25 gm. (or 1 ounce) of diluted alcohol, packed in a percolator and diluted alcohol gradually poured upon them until 950 Cc. (or 32⅓ fl.ounces) of tincture are obtained; the glycerin is then to be added and well mixed. <U. S., p 411. F C F, p 896.

TINCTURA CATECHU COMPOSITA. Compound Tincture of Catechu. Catechu, in No. 40 powder, 100 gm. (or 3½ ounces av.), cassia cinnamon, in No. 40 powder, 50 gm. (or 1¾ ounces av.), diluted alcohol a sufficient quantity to make 1000 Cc. (or 33¾ fl. ounces).

The powders are to be mixed and packed, without moistening, firmly in a percolator, and diluted alcohol gradually poured upon them until 1000 Cc. (or 33¾ fl.ounces) of tincture are obtained. <U. S., p 412. F C F, p 897.

The former Pharm. directed the powders to be moistened with diluted alcohol, and macerated for 24 hours before packing. This tincture can be advantageously made by macerating the powders, in the dilute alcohol for 7 days, then pouring the whole into a percolator and after the liquid has ceased to drop, adding enough diluted alcohol through the percolator to make the required measure.

TINCTURA CHIRATÆ. Tincture of Chirata. Chirata, in No. 40 powder, 100 gm. (or 2 ounces av.), alcohol and water, each, a sufficient quantity to make 1000 Cc. (or 19⅕ fl.ounces).

Alcohol 6½ measures with water 3½ measures are to be mixed as a menstruum. The powder is to be moistened with 100 Cc. (or 2 ounces) of the liquid and macerated for 24 hours, then packed firmly in a percolator and the menstruum gradually poured upon it until 1000 Cc. (or 19⅕ fl.ounces) of tincture are obtained. <U. S., p 412. F C F, p 898.

TINCTURA CIMICIFUGÆ. Tincture of Cimicifuga. Cimicifuga, in No. 60 powder, 200 gm. (or 3⅝ ounces av.), alcohol a sufficient quantity.

The powder is to be moistened with 150 Cc. (or 2½ fl.ounces) of alcohol and macerated for 24 hours. It is then to be packed firmly in a percolator and alcohol gradually poured upon it until 1000 Cc. (or 17 fl.ounces) of tincture are obtained. <U. S., p 412 F C F, p 899.

TINCTURA CINCHONÆ. Tincture of Cinchona. Cinchona, in No. 60 powder, 200 gm. (or 7 ounces av.), glycerin 75 Cc. (or 2½ fl.ounces), alcohol and water, each, a sufficient quantity to make 1000 Cc. (or 33¾ fl.ounces).

The glycerin is to be mixed with 675 Cc. (or 23 fl.ounces) of alcohol, and 250 Cc. (or 8½ fl.ounces) of water. The powder is to be moistened with 200 Cc. (or 6¾ fl.ounces) of the mixture and macerated for 24 hours. It is then to be packed firmly in a percolator, the remainder of the menstruum poured upon it, and when the liquid has disappeared from the surface of the drug, more alcohol and water mixed in the same proportion as above, and the percolation continued until 1000 Cc. (or 33¾ fl.ounces) of tincture are obtained. <U. S., p 413. F C F, p 900.

TINCTURA CINCHONÆ COMPOSITA. Compound Tincture of Cinchona. Red cinchona 100 gm. (or 3½ ounces av.), bitter orange peel 80 gm. (or 2¾ ounces av.), serpentaria 20 gm. (or 300 grains), glycerin 75 Cc. (or 2½ fl.ounces), alcohol and water, each, a sufficient quantity to make 1000 Cc. (or 33¾ fl.ounces).

The glycerin is to be mixed with 850 Cc. (or 28¾ fl.ounces), of alcohol, and 75 Cc. (or 2½ fl.ounces) of water, as a menstruum. The drugs are to be reduced to a fine (No. 60) powder, moistened with 200 Cc. (or 6¾ fl.ounces) of the menstruum and macerated for 24 hours. The powder is then to be packed firmly in a percolator, the remainder of the menstruum poured upon it, and when it has disappeared from the surface, alcohol and water mixed in the same proportions as before, and the percolation continued until 1000 Cc. (or 33¾ fl.ounces) are obtained. <U. S., p 413. F C F, p 901.

This is the same, practically, as before. It is familiarly known as Huxham's Tincture.

TINCTURA CINNAMOMI. Tincture of Cinnamon. Ceylon cinnamon, in No. 40 powder, 100 gm. (or 3⅝ ounces av.), glycerin 50 Cc. (or 1¾ fl.ounces), alcohol and water, each, a sufficient quantity to make 1000 Cc. (or 34 fl.ounces).

The glycerin is to be mixed with 750 Cc. (or 25½ fl.ounces) of alcohol, and 250 Cc. (or 8½ fl.ounces) of water as a menstruum. The powder is to be moistened with 50 Cc. (or 1¾ fl.ounces) of the menstruum and packed in a conical percolator. The menstruum is gradually to be poured upon the powder and, when it has disappeared from the surface, alcohol and water mixed in the same proportion as before are to be added and the percolation continued until 1000 Cc. (or 34 fl.ounces) of tincture are obtained. <U. S., p 414. F C F, p 902.

This tincture may readily be made by macerating the cinnamon for 7 days in the menstruum, pouring the whole into a percolator and adding enough alcohol and water through the percolator to make the required measure. The glycerin is added

to the present formula, as it helps to keep the astringent properties of the cinnamon in solution.

TINCTURA COLCHICI SEMINIS. Tincture of Colchicum Seed. TINCTURA COLCHICI, PHARM. 1880. Colchicum seed, in No. 30 powder, 150 gm. (or 5 ounces av.), alcohol and water, each, a sufficient quantity to make 1000 Cc. (or 32 fl.ounces).

Alcohol 3 measures with water 2 measures are to be mixed as a menstruum. The powder is to be moistened with 100 Cc. (or 3½ fl.ounces) of the liquid and macerated for 24 hours. It is then to be firmly packed in a percolator and menstruum gradually poured upon it until 1000 Cc. (or 32 fl.ounces) of the tincture are obtained. <U. S., p 414. F C F, p 903.

TINCTURA CROCI. Tincture of Saffron. Saffron 100 gm. (or 1 ounce av.), diluted alcohol a sufficient quantity to make 1000 Cc. (or 9½ fl.ounces).

The saffron is to be moistened with 100 Cc. (or 1 ounce) of diluted alcohol and macerated for 24 hours. It is then to be firmly packed in a percolator and diluted alcohol gradually poured upon it until 1000 Cc. (or 9½ fl.ounces) of tincture are obtained. <U. S., p 414. F C F, p 904.

The saffron directed is "the stigmas of Crocus sativus," and not the Carthamus tinctorius, which is quite generally sold for saffron.

TINCTURA CUBEBÆ. Tincture of Cubeb. Cubeb, in No. 40 powder, 300 gm. (or 4 ounces av.), alcohol a sufficient quantity to make 1000 gm. (or 19⅕ fl.ounces).

The powder is to be moistened with 100 Cc. (or 2 ounces) of alcohol and macerated for 24 hours. It is then to be packed firmly in a percolator and alcohol gradually poured upon it until 1000 Cc. (or 19⅕ fl.ounces) of tincture are obtained. <U. S., p 415. F C F, p 905.

The present preparation is double the strength of the former official, which was cubeb 10 parts, percolated with *diluted* alcohol to make 100 parts by weight.

TINCTURA DIGITALIS. Tincture of Digitalis. Digitalis, in No. 60 powder, 150 gm. (or 5 ounces av.), diluted alcohol a sufficient quantity to make 1000 Cc. (or 32 fl.ounces).

The powder is to be moistened with 150 Cc. (or 5 ounces) of diluted alcohol and macerated for 24 hours. It is then to be firmly packed in a percolator and diluted alcohol gradually poured upon it until 1000 Cc. (or 32 fl.ounces) of tincture are obtained. <U. S., p 415. F C F. p 905.

TINCTURÆ HERBARUM RECENTIUM. Tincture of Fresh Herbs. "These tinctures, which are not otherwise directed, are to be prepared by the following formula:" The fresh herb, bruised or crushed, 500 gm. (or 16⅔ ounces av.), alcohol 1000 Cc. (or 32 fl.ounces).

The herb is to be macerated with the alcohol for 14 days, then expressed and the liquid filtered. <U. S., p 415. F C F, p 913.

TINCTURA FERRI CHLORIDI. Tincture of Chloride of Iron. "A hydro-alcoholic solution of Ferric Chloride, Fe_2Cl_6, containing about 13.6 per cent. of the anhydrous salt, and corresponding to about 4.7 (4.69) per cent. of metallic iron." <U. S., p 416. F C F, p 907.

The present formula is: Solution of ferric chloride 250 Cc. (or 7 fl.ounces), alcohol, a sufficient quantity to make 1000 Cc. (or 30 fl.ounces). The solution is to be mixed with enough alcohol to make 1000 Cc. (or 30 fl.ounces), and the tincture allowed to stand in a closely-covered vessel for at least three months. It is then to be transferred to glass-stoppered bottles and kept protected from the light.

The 1880 Pharm. was, solution of chloride of iron 35 parts, alcohol 65 parts, by weight. The present preparation should have sp. gr. about 0.960 at N T. showing it to have slightly less of the iron solution than the former, which had sp. gr. about 0.980.

TINCTURA GALLÆ. Tincture of Nutgall. Nutgall, in No. 40 powder 200 gm. (or 3¾ ounces av.), glycerin 100 Cc. (or 2 fl. ounces, alcohol a sufficient quantity to make 1000 Cc. (or 17 fl. ounces).

The glycerin is to be mixed with 900 Cc. (or 15 fl.ounces) of alcohol as a menstruum. The powder is to be packed without moistening it in a conical glass percolator, the menstruum poured upon it, and afterwards alcohol until 1000 Cc. (or 17 fl.ounces) of tincture are obtained. <U. S., p 416. F C F, p 909.

In the former Pharm., *diluted* alcohol was directed instead of alcohol, the powder being moistened before percolation. The object of using alcohol instead of diluted alcohol, is probably to prevent the softening and massing of the nutgall. It is also a better solvent of the constituents desired.

TINCTURA GELSEMII. Tincture of Gelsemium. Gelsemium, in No. 60 powder, 150 gm. (or 2½ ounces av.), alcohol and water, of each, a sufficient quantity to make 1000 Cc. (or 16 fl. ounces).

Alcohol 6½ measures with water 3½ measures are to mixed as a menstruum. The powder is to be moistened with 100 Cc. (or 2

ounces) of the liquid and macerated for 24 hours, then packed in a percolator and the menstruum gradually poured upon it until 1000 Cc. (or 16 fl.ounces) of tincture are obtained. <U. S., p 417. F C F, p 909.

In the 1880 Pharm, alcohol, without dilution, was directed as the menstruum.

TINCTURA GENTIANÆ COMPOSITA. Compound Tincture of Gentian. Gentian 100 gm. (or 3½ ounces av.), bitter orange peel 40 gm. (or 1⅜ ounce av.), cardamom 10 gm. (or 154 grains), alcohol and water, each, a sufficient quantity to make 1000 Cc. (or 33¾ fl.ounces).

The drugs are to be reduced to a moderatly coarse (No. 40) powder. Alcohol 3 measures with water 2 measures are to be mixed as a menstruum, and the powder moistened with 100 Cc. (or 3½ ounces) of the liquid and macerated for 24 hours. It is then to be packed in a percolator and the menstruum gradually poured upon it until 1000 Cc. (or 33¾ fl.ounces) of tincture are obtained. <U. S., p 417. F C F, p 910.

In the 1880 Pharm. the proportion of the drugs was gentian 8, bitter orange 4, cardamom 2; instead of 10, 4, 1, as at present, and diluted alcohol was directed as the menstruum.

TINCTURA GUAIACI. Tincture of Guaiac. Guaiac, in coarse powder, 200 gm. (or 7 ounces av.), alcohol, a sufficient quantity to make 1000 Cc. (33¾ fl.ounces).

The powder is to be mixed with 800 Cc. (or 27 fl.ounces) of alcohol and macerated in a closed vessel for seven days, then filtered and enough alcohol added through the filter to make the measure 1000 Cc. (or 33¾ fl.ounces). <U. S., p 418. F C F, p 911.

TINCTURA GUAIACI AMMONIATA. Ammoniated Tincture of Guaiac. Guaiac, in coarse powder, 200 gm. (or 3½ ounces av.), aromatic spirit of ammonia a sufficient quantity to make 1000 Cc. (or 16¾ fl.ounces).

The powder is to be mixed with 800 Cc. (or 14 fl.ounces) of the aromatic spirit of ammonia, and macerated for 7 days in a closed vessel; then filtered through paper in a well-covered funnel and enough of the aromatic spirit of ammonia added through the filter to make the measure 1000 Cc. (or 16¾ fl.ounces). <U. S., p 418. F C F, p 912.

TINCTURA HUMULI. Tincture of Hops. Hops, well dried and in No. 20 powder, 200 gm. (or 7 ounces av.), diluted alcohol a sufficient quantity to make 1000 Cc. (or 33¾ fl.ounces).

The powder is to be moistened with 400 Cc. (or 13½ fl.ounces)

of diluted alcohol and macerated for 24 hours; then packed firmly in a percolator and diluted alcohol gradually poured upon it until 1000 Cc. (or 33¾ fl ounces) of tincture are obtained. <U. S., p 418. F C F, p 914.

TINCTURA HYDRASTIS. Tincture of Hydrastis. Hydrastis, in No. 60 powder, 200 gm. (or 3½ ounces av.), diluted alcohol a sufficient quantity to make 1000 Cc. (or 16¾ fl.ounces).

The powder is to be moistened with 150 Cc. (or 2½ fl.ounces) of diluted alcohol, and macerated for 24 hours; then packed firmly in a percolator and diluted alcohol gradually poured upon it until 1000 Cc. (or 16¾ fl.ounces) of tincture are obtained. <U. S., p 418. F C F, p 914.

TINCTURA HYOSCYAMI. Tincture of Hyoscyamus. Hyoscyamus, in No. 60 powder, 150 gm. (or 5 ounces av.), diluted alcohol a sufficient quantity to make 1000 Cc. (or 32 fl.ounces).

The powder is to be moistened with 150 Cc. (or 5 fl.ounces) of diluted alcohol and macerated for 24 hours; then packed firmly in a percolator and diluted alcohol poured upon it until 1000 Cc. (or 32 fl.ounces) of tincture are obtained. <U. S., p 419. F C F, p 915.

TINCTURA IODI. Tincture of Iodine. Iodine 70 gm. (or 1 ounce av.), alcohol a sufficient quantity to make 1000 Cc. (or 13¾ fl.ounces).

The iodine is to be triturated rapidly in a mortar to a coarse powder, and, at once, transferred to a graduated bottle. The mortar is to be rinsed with several successive portions of alcohol and the rinsings poured into the bottle, then enough alcohol added to make the measure 1000 Cc. (or 13¾ fl.ounces). The bottle is to be shaken occasionally until the iodine is dissolved. <U. S., p 419. F C F, p 916.

TINCTURA IPECACUANHÆ ET OPII. Tincture of Ipecac and Opium. Deodorized tincture of opium 1000 Cc. (or 10 fl. ounces), fluid extract of ipecac 100 Cc. (or 1 fl.ounce), diluted alcohol a sufficient quantity to make 1000 Cc. (or 10 fl.ounces).

The deodorized tincture of opium is to be evaporated in a tared capsule on a water-bath until it weighs 800 gm. (or 8 ounces av.+ 151 grains). When cold the fluid extract of ipecac is to be added and the mixture filtered, adding enough diluted alcohol through the filter to make the measure 1000 Cc. (or 10 fl.ounces). This represents Dover's powder in liquid form. <U. S., p 419. F C F, p 917.

TINCTURA KINO. Tincture of Kino. The present formula is Kino 100 gm. (or 1 ounces av.), glycerin 150 Cc. (or 1½ fl.ounces), water 200 Cc. (or 2 fl.ounces), alcohol a sufficient quantity to make 1000 Cc. (or 10 fl.ounces).

The glycerin and water are to be mixed with 650 Cc. (or 6½ fl.ounces) of alcohol. The kino is to be rubbed in a mortar, adding gradually a sufficient quantity of the menstruum, until a smooth paste is produced. This is to be transferred to a bottle, the remainder of the menstruum added and the mixture macerated with occasional agitation for 24 hours. It is then to be filtered through paper adding enough alcohol through the filter to make the product measure 1000 Cc. (or 10 fl.ounces). It should be kept in small completely filled bottles in a cool place. <U. S., p 420. F C F, p 918.

The manipulation of the formula is different than in the 1880 Pharm.

TINCTURA KRAMERIAE Tincture of Krameria. Krameria, in No. 40 powder, 200 gm. (or 3¾ ounces av.), diluted alcohol a sufficient quantity to make 1000 Cc. (or 17 fl.ounces).

The powder is to be moistened with 200 Cc. (or 3½ fl.ounces) of diluted alcohol and macerated for 24 hours; then packed firmly in a percolator and diluted alcohol gradually poured upon it until 100 Cc. (or 17 fl.ounces) of tincture are obtained. <U. S. p 420. F C F, 919.

TINCTURA LACTUCARII. Tincture of Lactucarium. *new.* Lactucarium 500 gm. (or 8 ounces av.), glycerin 250 Cc. (or 3¾ fl. ounces), water, alcohol, benzin and diluted alcohol, each, a sufficient quantity.

The lactucarium is to be beat in a mortar with clean sand, to a coarse powder and the mixture put into a bottle. To it 2000 Cc. (or 31 fl.ounces) of benzin are to be added and the mixture agitated frequently during 48 hours. It is then to be poured upon a double filter, allowed to drain and then washed with 1500 Cc. (or 23 fl.ounces) of benzin and the lactucarium afterwards dried by exposure to the air. When it is dry and free from the odor of benzin it is to be reduced to a powder, using more sand, if necessary, and the powder packed in a conical percolator. The glycerin is to be mixed with 200 Cc. (or 3 fl.ounces) of water and 500 Cc. (or 7⅔ fl.ounces) of alcohol, the powder moistened with 500 Cc. (or 7⅔ fl.ounces) of the mixture, and when the percolate has begun to drop, the lower orifice closed and the contents of the percolator allowed to macerate for 24 hours. Then begin the

percolation, allow it to proceed very slowly, adding first the remainder of the menstruum and then diluted alcohol until the lactucarium is exhausted. The first 750 Cc. (or 42 fl.ounces) of the percolate are to be reserved and the remainder evaporated on a water-bath at a temperature not exceeding 70° C. (158°F.) to 250 Cc. (or 3⅓ fl ounces) and mixed with the reserved portion. This is to be filtered after standing and diluted alcohol added through the filter to make 1000 Cc. (or 15⅓ fl.ounces).

This tincture replaces the fluid extract of lactucarium which was official in the 1880 revision, but is only one-half its strength. It is used for making syrup of lactucarium, or may be prescribed or used as it is. Each minim represents ½ grain of lactucarium; the dose is from 4 to 10 minims.

TINCTURA LAVENDULÆ COMPOSITA. Compound Tincture of Lavender. COMPOUND SPIRIT OF LAVENDER. Oil of Lavender flowers 8 Cc. (or 120 minims), oil of rosmary 2 Cc. (or 30 minims), cassia cinnamon in coarse powder, 20 gm. (or ¾ ounce av.), cloves 10 gm. (or 150 grains), red saunders, in coarse powder, 10 gm. (or 150 grains), alcohol 700 Cc. (or 23 fl.ounces), water 250 Cc. (or 8 fl.ounces), diluted alcohol a sufficient quantity to make 1000 Cc. (or 33 fl.ounces).

The oils are to be dissolved in the alcohol and the water added. The spices, etc., are to be reduced to a coarse powder and moistened with a sufficient quantity of the solution of the oil, packed in a percolator and the remainder of the solution poured upon them, and afterwards enough diluted alcohol to make 1000 Cc. of the percolate. <U. S., p 422. F C F. p 919.

This preparation is better known by its old name, compound *spirit* of lavender. The older stock bottles of drug stores are so labeled. and it is thus prescribed by older practitioners.

TINCTURA LOBELIÆ. Tincture of Lobelia. Lobelia, in No. 40 powder, 200 gm. (or 3⅝ ounces av.), diluted alcohol a sufficient quantity to make 1000 Cc. (or 17½ fl.ounces).

The powder is to be moistened with 200 Cc. (or 3½ fl.ounces) of diluted alcohol, and macerated for 24 hours; then packed firmly in a percolator and diluted alcohol gradually poured upon it until 1000 Cc. (or 17½ fl.ounces) of tincture are obtained. <U. S., p 422. F C F, p 921.

TINCTURA MATICO. Tincture of Matico. Matico, in No. 40 powder, 100 gm. (or 2 ounces av.), diluted alcohol a sufficient quantity to make 1000 (or 19⅕ fl.ounces).

The powder is to be moistened with 100 Cc. (or 2 ounces) of diluted alcohol, and macerated for 24 hours; then packed firmly

in a percolator and diluted alcohol gradually poured upon it until 1000 Cc. (or 19⅕ fl.ounces) of tincture are obtained. <U. S., p 422. F C F, p 922.

TINCTURA MOSCHI. Tincture of Musk. The present Pharm. reduces the strength of this tincture one-half. Musk 50 gm. (or 50 grains), alcohol 450 Cc. (or 1 fl.ounce), diluted alcohol a sufficient quantity to make 1000 Cc. (or 2¼ fl.ounces).

The musk is to be rubbed in a mortar, first with a little of the water, until a smooth mixture is made, and then with the remainder of the water. The mixture is to be transferred to a bottle, the mortar rinsed out with successive portions of the alcohol and added, and allowed to macerate for 7 days with occasional shaking. It is then to be filtered and enough diluted alcohol added through the filter to make the measure 1000 Cc. (or 2¼ fl.ounces). <U. S., p 422. F C F, p 922.

TINCTURA MYRRHÆ. Tincture of Myrrh. Myrrh, in moderately coarse powder, 200 gm. (or 4 ounces av.), alcohol a sufficient quantity to make 1000 Cc. (or 19⅕ fl.ounces).

The powder is to be mixed with 800 Cc. (or 16 fl.ounces) of alcohol in a closed vessel, and macerated for 7 days with occasional shaking, and then filtered, adding enough alcohol through the filter to make the measure 1000 Cc. (or 19⅕ fl.ounces). <U. S., p 423. F C F, p 923.

TINCTURA NUCIS VOMICÆ. Tincture of Nux Vomica. The present Pharm. directs: Extract of nux vomica, dried at 100° C. (212° F.), 20 gm. (or 155 grains), alcohol and water, each, a sufficient quantity to make 1000 Cc. (or 17 fl.ounces).

The extract of nux vomica (which should contain 15 per cent. of alkaloids) is to be dissolved in a sufficient quantity of a mixture of 3 volumes of alcohol with 1 volume of water to make the tincture measure 1000 Cc. (or 17 fl.ounces). <U. S., p 423. F C F, p 623.

The 1880 Pharm. directed this tincture to be made from powdered nux vomica, on the basis of 2 per cent. of the dry extract in the finished preparation, which is the same as now, except that being made with alcohol by weight, the present preparation would contain about 12 per cent. more of the extract in a given volume.

TINCTURA OPII. Tincture of Opium. LAUDANUM. The present formula directs precipitated calcium phosphate to be mixed with the opium, which prevents its massing and thereby makes the percolation more rapid and satisfactory. The percentage of strength is the same. Powdered opium 100 gm. (or 3

ounces av.), precipitated calcium phosphate 50 gm. (or 1½ ounces av.), water 400 Cc. (or 11½ fl.ounces), alcohol 400 Cc. (or 11½ fl. ounces), diluted alcohol a sufficient quantity to make 1000 Cc. (or 28¾ fl.ounces).

The powders are to be rubbed in a mortar with water previously heated to a temperature of 90° C. (194° F.), until a smooth mixture is made, and macerated for 12 hours. The alcohol is then to be added and thoroughly mixed and the whole transferred to a percolator. The first portions that pass are to be returned until the liquid runs clear, and when the percolate has ceased to drop diluted alcohol is to be gradually added through the percolator until 1000 Cc. (or 28¾ fl.ounces) of tincture are obtained. <U. S., p 424. F C F, p 925.

A process of assay for tincture of opium is given in the Pharm. It should contain from 1.3 to 1.5 per cent. of crystallized morphine.

TINCTURA OPII CAMPHORATA. Camphorated Tincture of Opium. Paregoric. The formula for this preparation remains unchanged except by the substitution of metric weight and measure for parts by weight. Powdered opium 4 gm. (or 60 grains), benzoic acid, 4 gm. (or 60 grains), camphor 4 gm. (or 60 grains), oil of anise 4 Cc. (or 60 minims), glycerin 40 Cc. (or 1⅜ fl.ounce), diluted alcohol, a sufficient quantity to make 1000 Cc. (or 33 fl. ounces.

The drugs are to be macerated with 900 Cc. (or 30 fl.ounces) of diluted alcohol for three days with frequent shaking. The mixture is then to be filtered, and enough diluted alcohol added through the filter to make 1000 Cc. (or 33 fl.ounces) of the mixture. <U. S., p 425. F C F, p 928.

TINCTURA OPII DEODORATI. Tincture of Deodorized Opium. Tinctura Opii Deodorata Pharm. 1880. Powdered opium 100 gm. (or 3 ounces av.), precipitated calcium phosphate 50 gm. (or 1½ ounces av.), ether 200 Cc. (or 5¾ fl.ounces), alcohol 200 Cc. (or 5¾ fl.ounces), water, a sufficient quantity to make 1000 Cc. (or 28¾ fl.ounces).

The powders are to be rubbed in a mortar with the water previously heated to a temperature of 90° (194°F) until a smooth mixture is made, and macerated for 12 hours. The mixture is then to be transfered to a percolator and water gradually poured upon it until the opium is practically exhausted. The percolate obtained is to be reduced by evaporation on a water-bath to 100 Cc. (or 3 fl. ounces), and when it is cool, repeatedly shaken with the ether in a

bottle. The etherial solution when it has separated is to be poured off and the remaining liquid evaporated until all traces of ether have disappeared. The residue is then to be mixed with 500 Cc. (or 14½ fl ounces) of water and the mixture filtered through paper, adding through the filter enough water to make the filtered liquid measure 800 Cc. (or 23 fl.ounces). The alcohol is then to be added to the filtrate and well mixed. <U. S., p 425. F C F, p 929.

The present formula is the same as before except the substitution of metric weight and measure for parts, and the ether used, which is stronger, but has no effect on the finished preparation.

TINCTURA PHYSOSTIGMATIS. Tincture of Physostigma. The present Pharm. increases the strength of this tincture to 15 per cent. instead of 10 per cent., as was the 1880 preparation. It is now: Physostigma, in No. 40 powder, 150 gm. (or 2¾ ounces av.), alcohol a sufficient quantity to make 1000 Cc. (or 18 fl.ounces).

The powder is to be moistened with 100 Cc. (or 2 ounces) of alcohol, and macerated for 24 hours; then packed firmly in a percolator and alcohol gradually poured upon it until 1000 Cc. (or 18 fl.ounces) of tincture are obtained.

The increase of strength of this preparation makes it necessary to reduce the dose to correspond. The dose of the present tincture is 0.5 gm. (8 minims) to 1.5 gm. (about 25 minims).

TINCTURA PYRETHRI. Tincture of Pyrethrum. Pyrethrum in No. 40 powder, 200 gm. (or 3⅝ ounces av.), alcohol a sufficient quantity to make 1000 Cc. (or 17½ fl.ounces).

The powder is to be moistened with 150 Cc. (or 2½ fl.ounces) of alcohol, and macerated for 24 hours; then packed firmly in a percolator and alcohol gradually poured upon it until 1000 Cc. (or 17½ fl.ounces) of tincture are obtained. <U. S., p 426. F C F, p 932.

TINCTURA QUASSIÆ. Tincture of Quassia. Quassia, in No. 40 powder, 100 gm. (or 3 ounces av.), alcohol and water, each, a sufficient quantity to make 1000 Cc. (or 28¾ fl.ounces).

Alcohol 3⅓ measures with water 6⅔ measures are to be mixed as a menstruum. The powder is to be moistened with 100 Cc. (or 3 ounces) of the menstruum and macerated for 24 hours; then packed firmly in a percolator and the menstruum gradually poured upon it until 1000 Cc. (or 28¾ fl.ounces) of the tincture are obtained. <U. S., p 426. F C F, p 932.

TINCTURA QUILLAJÆ. Tincture of Quillaja. *new.* Quillaja, coarsely ground, 200 gm. (or 6 ounces av.), alcohol 350 Cc. (or 10

fl.ounces), water a sufficient quantity to make 1000 Cc. (or 29 fl. ounces).

The quillaja is to be boiled in a suitable vessel with 800 Cc. (or 23 ounces) of water for 15 minutes, then strained and the residue on the strainer washed with 100 Cc. (or 3 fl.ounces) of water, and mixed with the strained liquid. This is then to be boiled down to 600 Cc. (or 17 fl.ounces), allowed to cool, mixed with the alcohol, and when the insoluble matter has subsided the liquid portion filtered and enough water added through the filter to make 1000 Cc. (or 29 fl.ounces) of the tincture. <U. S., p 427. F C F, p 948.

This is used in making some emulsions and as a soda foam. It is also flavored and used as a tooth wash, etc.

TINCTURA RHEI. Tincture of Rhubarb. In the present formula the proportions of the ingredients are somewhat changed. 10 per cent. of glycerin is added and the alcoholic strength increased. This is the present formula: Rhubarb 100 gm. (or 3 ounces av.), cardamom 20 gm. (or 262 grains), glycerin 100 Cc. (or 2⅞ fl.ounces), alcohol and water, each, a sufficient quantity.

The rhubarb and cardamom are to be reduced to a moderately coarse (No. 40) powder. The glycerin is to be mixed with 600 Cc. (or 17½ fl.ounces) of alcohol, and 300 Cc. (or 9 fl.ounces) of water. The powder is to be moistened with 100 Cc. (or 3 fl. ounces) of the liquid, macerated for 24 hours, packed moderately in a percolator and the remainder of the menstruum gradually poured upon it. When the liquid has disappeared alcohol and water in the same proportions as above are to be mixed and the percolation continued with the mixture until 1000 Cc. (or 29 fl. ounces) of tincture are obtained. <U. S., p 427. F C F, p 934.

TINCTURA RHEI AROMATICA. Aromatic Tincture of Rhubarb. The proportion of the medicinal agents remains the same in this preparation as before, but 10 per cent. of glycerin is added. Rhubarb 200 gm. (or 6 ounces av.), cassia cinnamon 40 gm. (or 1⅕ ounces av.), cloves 40 gm. (or 1⅕ ounces av.), nutmeg 40 gm. (or 1⅕ ounces av.), glycerin 100 Cc. (or 2⅞ fl.ounces), alcohol, water and diluted alcohol, each, a sufficient quantity to make 1000 Cc. (or 29 fl.ounces). The rhubarb and spices are to be mixed and reduced to a moderately coarse (No. 40) powder. The glycerin is to be mixed with 500 Cc. (or 14½ fl.ounces) of alcohol and 400 Cc. (or 12 fl.ounces) of water.

The powder is to be moistened with 150 Cc. (or 4½ fl.ounces) of the liquid, macerated for 24 hours; then packed in a percolator

and the remainder of the menstruum gradually poured upon it, and afterwards enough diluted alcohol to make 1000 Cc. (or 29 fl. ounces) of the tincture. <U. S., p 428. F C F, p 935.

TINCTURA RHEI DULCIS. Sweet Tincture of Rhubarb. In the present formula 10 per cent. of glycerin is added and the proportions of the ingredients slightly changed: Rhubarb 100 gm. (or 3 ounces av.), glycyrrhiza 40 gm. (or 1⅓ ounces av.), anise 40 gm. (or 1⅓ ounces av.), cardamom 10 gm. (or 130 grains), glycerin 100 Cc. (or 2⅞ fl.ounces), alcohol, water and diluted alcohol, each, a sufficient quantity to make 1000 Cc. (or 29 fl.ounces).

The dry drugs are to be reduced to a moderately coarse (No. 40) powder. The glycerin is to be mixed with 500 Cc. (or 14½ fl.ounces) of alcohol, and 400 Cc. (or 12 fl.ounces) of water. The powder is to be moistened with 150 Cc. (or 4½ fl.ounces) of the liquid and macerated for 24 hours; then packed firmly in a percolator, the remainder of the menstruum poured gradually upon it, and afterwards diluted alcohol until 1000 Cc. (or 29 fl. ounces) of tincture are obtained. <U. S., p 428. F C F, p 935.

TINCTURA SANGUINARIÆ. Tincture of Sanguinaria. Sanguinaria, in No. 60 powder, 150 gm. (or 2¾ ounces av.), acetic acid 20 Cc. (or 165 minims), alcohol and water, each, a sufficient quantity to make 1000 Cc. (or 18 fl.ounces).

Alcohol 3 measures with water 2 measures are to be mixed and the acetic acid added to 100 Cc. (or 2 ounces) of the mixture, the powder moistened with this portion and allowed to macerate for 24 hours. The powder is then packed firmly in a percolator and the menstruum poured gradually upon it until 1000 Cc. (or 18 fl. ounces) of tincture are obtained. <U. S., p 429. F C F, p 937.

TINCTURA SCILLÆ. Tincture of Squill. Squill, in No. 30 powder, 150 gm. (or 2¾ ounces av.), alcohol and water, each, a sufficient quantity to make 1000 Cc. (or 18 fl.ounces).

Alcohol 3 measures with water 1 measure are to be mixed as a menstruum. The powder is to be moistened with 200 Cc. (or 4 ounces) of the liquid and macerated for 24 hours, then packed in a percolator and the menstruum gradually poured upon it until 1000 Cc. (or 18 fl.ounces) of the tincture are obtained. <U. S., p 429. F C F, p 938.

TINCTURA SERPENTARIÆ. Tincture of Serpentaria. Serpentaria, in No. 40 powder, 100 Cc. (or 1½ ounces av.), alcohol and water, each, a sufficient quantity to make 1000 Cc. (or 14½ fl.ounces).

Alcohol 6½ measures with water 3½ measures are to be mixed as a menstruum. The powder is to be moistened with 100 Cc. (or 1½ fl.ounces) of the liquid and macerated for 24 hours, then packed firmly in a percolator and menstruum poured gradually upon it until 1000 Cc. (or 14½ fl.ounces) of tincture are obtained. <U. S., p 430. F C F, p 939.

TINCTURA STRAMONII SEMINIS. Tincture of Stramonium Seed. TINCTURA STRAMONII, PHARM. 1880. In the present Pharm. the strength of this tincture is increased to 15 per cent. instead of 10 per cent. as in the 1880 Pharm. Stramonium seed, in No. 40 powder, 150 Cc. (or 2¾ ounces av.), diluted alcohol a sufficient quantity to make 1000 Cc. (or 18 fl.ounces).

The powder is to be moistened with 100 Cc. (or 2 ounces) of diluted alcohol and macerated for 24 hours, then packed firmly in a percolator and diluted alcohol gradually poured upon it until 100 Cc. (or 18 fl.ounces) of tincture are obtained. <U. S., p 430.

TINCTURA STROPHANTHI. Tincture of Strophanthus. *new.* Strophanthus, in No. 30 powder, 50 gm. (or 1 ounce av.), alcohol and water, each, a sufficient quantity to make 1000 Cc. (or 19⅕ fl. ounces).

Alcohol 6½ measures with water 3½ measures are to be mixed and the powder digested with 70 Cc. (or 1⅓ ounces) of the menstruum for 2 days, then it is to be transferred to a percolator and menstruum gradually poured upon it until 1000 Cc. (or 19⅕ fl. ounces) of tincture are obtained. <U. S., p 430.

This new tincture has been used as cardiac tonic, its action being somewhat similar to digitalis; as a diuretic, increasing the quantity of urine for a longer time than most diuretics; as an antipyretic promptly reducing the temperature. It has also been used in the treatment of goitre and enlarged glands; also as a local anaesthetic. The dose is from 1 to 10 minims (0.065 to 0.65 Cc.) administered cautiously.

TINCTURA SUMBUL. Tincture of Sumbul. Sumbul, in No. 30 powder, 100 gm. (or 1½ ounces av.), alcohol and water, each, a sufficient quantity to make 1000 Cc. (or 14½ fl.ounces).

Alcohol 6½ measures with water 3½ measures are to be mixed and the powder moistened with 100 Cc. (or 1½ ounces) of the liquid and macerated for 24 hours, then the powder is to be packed firmly in a percolator and the menstruum gradually poured upon it until 1000 Cc. (or 14½ fl.ounces) of tincture are obtained. <U. S., p 431. F C F, d 940.

TINCTURA TOLUTANA. Tincture of Tolu. Balsam of tolu 100 gm. (or 1½ ounces av.), alcohol a sufficient quantity to make 1000 Cc. (or 14½ fl.ounces).

The balsam of tolu is to be macerated with 900 Cc. (or 12 fl. ounces) of alcohol until it is dissolved, then filtered through paper and enough alcohol added through the filter to make the tincture measure 1000 Cc. (or 14½ fl.ounces). <U. S., p 431. F C F, p 940.

This tincture is now 10 per cent. by volume, of the balsam, instead of 10 per cent. by weight, making it a little stronger than before.

TINCTURA VALERIANÆ. Tincture of Valerian. Valerian, in No. 60 powder, 200 gm. (or 4 ounces av.), alcohol and water, each, a sufficient quantity to make 1000 Cc. (or 19⅕ fl.ounces).

Alcohol 3 measures with water 1 measure are to be mixed as a menstruum, and the powder moistened with 100 Cc. (or 2 ounces) of the menstruum and macerated for 24 hours; then the powder is to be packed firmly in a percolator and menstruum poured gradually upon it until 1000 Cc. (or 19⅕ fl.ounces) of tincture are obtained. <U. S., p 431. F C F, p 941.

It would seem that a larger quantity of the menstruum than is directed should be used for moistening the powder; we would suggest double the quantity.

TINCTURA VALERIANÆ AMMONIATA. Ammoniated Tincture of Valerian. Valerian, in No. 60 powder, 200 gm. (or 4 ounces av.), aromatic spirit of ammonia a sufficient quantity to make 1000 Cc. (or 19⅕ fl.ounces).

The powder is to be moistened with 200 Cc. (or 4 ounces) of the aromatic spirit of ammonia and macerated for 24 hours in a closed vessel; then packed firmly in a glass percolator and menstruum gradually poured upon it until 1000 Cc. (or 19⅕ ounces) of the tincture are obtained. <U. S., p 432. F C F, p 942.

TINCTURA VANILLÆ. Tincture of Vanilla. Vanilla, cut in small pieces, 100 gm. (or 3 ounces av.), sugar, in coarse powder, 200 gm. (or 6 ounces av.), alcohol and water, each, a sufficient quantity to make 1000 Cc. (or 29 fl.ounces).

Alcohol 6½ measures with water 3½ measures are to be mixed as a menstruum. The vanilla is to be macerated in 500 Cc. (or 14½ fl.ounces) of the mixture for 12 hours and the liquor then drained off and set aside. The vanilla is then to be put in a mortar with the sugar and beat to a uniform powder, then packed in a percolator, the reserved liquid poured upon it, and after it has disappeared from the surface menstruum is to be gradually poured upon it until 1000 Cc. (or 29 fl.ounces) of tincture have passed. <U. S, p 432. F C F, p 942.

In making this preparation it is necessary to have the vanilla cut fine, which can best be done by chopping it in a chopping-bowl. It should also be well drained

before beating in a mortar with the sugar in order that a uniform powder may be obtained. This or similar preparations, which may be stronger or weaker are considerably sold as EXTRACT OF VANILLA.

TINCTURA VERATRI VIRIDIS. Tincture of Veratrum Viride. The former Pharm. directed this to be made 50 parts by weight of the powdered drug, the present preparation is, therefore, after taking into account the sp. gr. of the finished preparation, somewhat weaker than before. Veratrum viride, in No. 60 powder, 400 gm. (or 14 ounces av.), alcohol a sufficient quantity to make 1000 Cc. (or 33⅝ fl.ounces).

The powder is to be moistened with 150 Cc. (or 5 fl.ounces) of alcohol and macerated for 24 hours. It is then to be packed firmly in a percolator and the alcohol gradually poured upon it, allowing it to percolate very slowly until 1000 Cc. (or 33⅝ fl. ounces) of tincture are obtained. <U. S., p 432. F C F, p 943.

TINCTURA ZINGIBERIS. Tincture of Ginger. Ginger, in No. 40 powder, 200 gm. (or 7 ounces av.), alcohol a sufficient quantity to make 1000 Cc. (or 33⅝ fl.ounces).

The ginger is to be moistened with 50 Cc. (or 2 fl.ounces) of alcohol and macerated for 24 hours. It is then to be packed firmly in a percolator, and alcohol poured gradually upon it, allowing it to percolate slowly until 1000 Cc. (or 33⅝ fl.ounces) of tincture are obtained. <U. S., p 433. F C F, p 944.

This tincture, or a similar preparation of greater or less strength, is frequently sold as EXTRACT or ESSENCE OF JAMAICA GINGER.

TRITURATIONES. Triturations. The general formula for triturations remains unchanged. The substance 10 gm. (or 154 grains), sugar of milk 90 gm. (or 1389 grains=3 ounces av. + 77 grains).

The substance is first to be triturated in a mortar with about an equal weight of the sugar of milk and the remainder of the sugar of milk gradually added and thoroughly mixed by triturating them together. <U. S., p 433. F C F, 856.

A great variety of triturates are now supplied by manufacturers in the form of tablets, generaliy called '*tablet triturates.*" The substances of which they are composed are triturated thoroughly together and then made into tablets of a size to represent a given quantity of the active medicinal agent.

TRITURATIO ELATERINI. Trituration of Elaterin. Elaterin 10 gm. (or 45 grains), sugar of milk 90 gm. (or 405 grains).

They are to be thoroughly mixed by trituration. <U. S., p 434 F C F, p 957.

This is given in the Pharm. as a sample formula; other triturations may be made in the same proportion, or in any desired proportion of the ingredients.

TROCHISCI. Troches. In the present Pharm. *Trochesci Magnesiæ* and *Trochisci Sodii Santoninatis* which were official in the 1880 Pharm. have been dismissed, and *Trochisci Santonini* has been added. Most of the formulas vary more or less from the former authority, but the difference is not enough to be important. Druggists as a rule buy these troches of manufacturing pharmacists, although they are more readily made than many of the Pharmacopœia preparations. We have given in the formulas which follow, both the 1880 and the 1890 directions so that druggists who have stock on hand may readily see how they compare.

TROCHISCI ACIDI TANNICI. Troches of Tannic Acid.

	1880.	1890.
Tannic acid,	100 grains (or 6.50 gm.)	6 gm. (or 92 grains).
Sugar,	1,000 grains (or 65.00 gm,)	65 gm. (or 1,000 gaains).
Tragacanth,	20 grains (or 1.60 gm.)	2 gm. (or 31 grains).
Stronger Orange Flower Water, to make	100 troches.	to make 100 troches,

The powders are to be rubbed together and made into a mass with orange flower water, which is to be divided into 100 troches. <U. S., p 434. F C F, p 961.

TROCHISCI AMMONII CHLORIDI. Troches of Ammonium Chloride.

	1880.	1890.
Ammonium chloride,	200 grains (or 13.00 gm.)	10 gm. (or 154 grains).
Extract of glycyrrhiza (1890).		25 gm. (or 386 grains).
Tragacanth,	25 grains (or 1.60 gm.)	2 gm. (or 31 grains).
Sugar,	1,000 grains (or 65.00 gm.)	50 gm. (or 771 grains).
Syrup of tolu a sufficient quantity to make	100 troches.	to make 100 troches.

The powders are to be rubbed together and a mass made, with syrup of tolu, which is to be divided into 100 troches. <U. S., p 434. F C F, p 961.

Extract of glycyrrhiza is added in the 1890 Pharm. in place of a portion of the sugar. This changes the color of the troches, which were white before, to brown.

TROCHISCI CATECHU. Troches of Catechu.

	1880.	1890.
Catechu,	100 grains (or 6.50 gm.)	6 gm. (or 92 grains).
Sugar,	1,000 grains (or 65.00 gm).	65 gm. (or 1,000 grains).
Tragacanth,	25 grains (or 1 60 gm.)	2 gm. (or 31 grains).
Stronger Orange Flower Water, a sufficient quantity to make	100 troches.	to make 100 troches.

The powders are to be rubbed together and a mass made, with the orange flower water, which is to be divided into 100 troches. <U. S. p 435. F C F, p 961.

TROCHISCI CRETÆ. Troches of Chalk.

	1880.	1890.
Prepared chalk,	400 grains (or 26.00 gm.)	25 gm. (or 385 grains).
Acacia powd.,	100 grains (or 6.50 gm.)	7 gm. (or 108 grains).
Spirit of nutmeg (1890),		3 Cc. (or 48 minims).
(Nutmeg, 1880),	15 grains (or 1.00 gm.)	
Sugar,	600 grains (or 39.00 gm.)	40 gm. (or 617 grains).
Water, a sufficient quantity to make	100 troches.	to make 100 troches.

The powders are to be mixed and worked with the liquids to form a mass which is to be divided into 100 troches. <U. S., p 435. F C F, p 962.

TROCHISCI CUBEBÆ. Troches of Cubeb.

	1880.	1890.
Oleoresin of cubeb,	50 grains (or 3.25 gm.)	4 gm. (or 62 grains).
Oil of sassafras,	15 grains (or 1.00 gm.)	1 Cc. (or 16 minims).
Ext. of glycyrrhiza,	400 grains (or 26.00 gm.)	25 gm. (or 386 grains).
Acacia powd.,	200 grains (or 13.00 gm.)	12 gm. (or 185 grains).
Syrup of tolu, sufficient to make	100 troches.	to make 100 troches.

The powders are to be rubbed together and thoroughly mixed, the oleoresin and oil are then added and thoroughly incorporated and a mass made, with the syrup tolu, which is to be divided into 100 troches. <U. S., p 435. F C F, p 962.

TROCHISCI FERRI. Troches of Iron.

	1880.	1890.
Ferric hydrate, dried,	500 grains (or 32.50 gm.)	30 gm. (or 463 grains).
Vanilla cut,	10 grains (or 0.65 gm.)	1 gm. (or 15 grains).
Sugar,	1,500 grains (or 97.50 gm.)	100 gm. (or 1,543 grains).
Mucilage of tragacanth, sufficient to make	100 troches.	to make 100 troches.

The vanilla is to be rubbed to a powder with a portion of the sugar and mixed with the ferric hydrate and the remainder of the sugar. The powder is then to be made into a mass with the mucilage of tragacanth, and divided into 100 troches. <U. S., p 436. F C F, p 962.

TROCHISCI GLYCYRRHIZÆ ET OPII. Troches of Glycyrrhiza and Opium.

	1880.	1890.
Extract of glycyrrhiza,	200 grains (or 13.00 gm.)	15 gm. (or 231 grains).
Powdered opium (1890),		0.5 gm. (or 8 grains).
Extract of opium (1880),	5 grains (or 0.32 gm.)	
Acacia,	200 grains (or 13.00 gm.)	12 gm. (or 185 grains).
Sugar,	300 grains (or 19.50 gm.)	20 gm. (or 308 grains).
Oil of anise,	3 grains (or 0.20 gm.)	0.2 gm. (or 3 minims).
Water, a sufficient quantity to make	100 troches.	to make 100 troches.

The powders are to be rubbed together until they are well mixed, the oil added and then the water to form a mass which is to be divided into 100 troches.

TROCHISCI IPECACUANHÆ. Troches of Ipecac.

	1880.	1890.
Ipecac. powd.,	25 grains (or 1.60 gm.)	2 gm. (or 31 grains).
Tragacanth, powd.,	25 grains (or 1.60 gm.)	2 gm. (or 31 grains).
Sugar, powd.,	1000 grains (or 65.00 gm.)	65 gm. (or 1000 grains).
Syrup of orange, sufficient to make	100 troches.	to make 100 troches.

The powders are to be rubbed together and made with the syrup into a mass which is to be divided into 100 troches. <U. S., p 436. F C F, p 963.

TROCHISCI KRAMERIÆ. Troches of Krameria.

	1880.	1890.
Extract of krameria,	100 grains (or 6.50 gm.)	6 gm. (or 92 grains).
Sugar,	1000 grains (or 65.00 gm.)	65 gm. (or 1000 grains).
Tragacanth,	25 grains (or 1.60 gm.)	2 gm. (or 31 grains).
Stronger orange flower water, sufficient to make	100 troches.	to make 100 troches,

The powders are are to be rubbed together and then with the orange flower water made into a mass which is to be divided into 100 troches. <U. S., p 437. F C F, p 963.

TROCHISCI MENTHÆ PIPERITÆ. Troches of Peppermint.

	1880.	1890.
Oil of peppermint,	15 grains (or 1 gm.)	1 Cc. (or 16 minims).
Sugar, powd.	1200 grains (or 78 gm.)	80 gm. (or 1235 grains).
Mucilage of tragacanth, sufficient to make	100 troches.	to make 100 troches.

The oil of peppermint is to be incorporated with the sugar and a mass made with the mucilage, which is to be divided into 100 troches. <U. S., p 437. F C F, p 964.

TROCHISCI MORPHINÆ ET IPECACUANHÆ. Troches of Morphine and Ipecac.

	1880.	1890.
Morphine sulphate,	2½ grains (or 0.16 gm.)	0.16 gm. (or 2½ grains).
Ipecac, powd.,	8 grains (or 0.50 gm.)	0.50 gm. (or 8 grains).
Sugar,	1000 grains (or 6.50 gm.)	65.00 gm. (or 1000 grains)
Oil of gaultheria,	1 grain (or 0.06 gm.)	0.20 Cc. (or 3 minims).
Mucilage of tragacanth, sufficient to make	100 troches.	to make 100 troches.

The powders are to be rubbed together until they are thoroughly mixed, and the oil incorporated with them. A mass is then to be made with the mucilage and divided into 100 troches. <U. S., p 437. F C F, p 964.

TROCHISCI POTASSII CHLORATIS. Troches of Potassium Chlorate.

	1880.	1890.
Potassium chlorate, powd.,	500 grains (or 32.50 gm.)	30 gm. (or 463 grains).
Sugar,	1900 grains (or 124. gm.)	120 gm. (or 1851 grains).
Tragacanth,	100 grains (or 6.50 gm.)	6 gm. (or 92 grains).
Spirit of lemon,	10 grains (or 0.65 gm.)	1 Cc. (or 16 minims).
Water, a sufficient quantity to make	100 troches.	to make 100 troches.

The powders are to be mixed, the spirit of lemon added and then water to make a mass which is to be divided into 100 troches. Care must be used in making these troches to prevent explosion or ignition; a bone or wood spatula should be used, and the mass should be mixed without pounding or great pressure. <U. S., p 438. F C F, p 965.

TROCHISCI SANTONINI. Troches of Santonin. *new.* Santonin, in fine powder 3 gm. (or 46 grains), sugar, in fine powder 110 gm. (or 1698 grains), tragacanth, in fine powder 3 gm. (or 46 grains), stronger orange flower water, sufficient to make 100 troches.

The powders are to be rubbed together until they are thoroughly mixed, then, with stronger orange flower water, made into a mass which is to be divided into 100 troches. <U. S., p 438. F C F, p 965.

TROCHISCI SODII BICARBONATIS. Troches of Sodium Bicarbonate.

	1880.	1880.
Sodium bicarbonate,	300 grains (or 19 50 gm.)	20 gm. (or 310 grains).
Sugar,	900 grains (or 58 50 gm.)	60 gm. (or 926 grains).
Nutmeg,	15 grains (or 1. gm.)	1 gm. (or 15 grains).
Mucilage of tragacanth, sufficient to make	100 troches.	to make 100 troches.

The nutmeg is to be triturated with the sugar gradually added, and then mixed intimately with the sodium bicarbonate. The powder is to be made into a mass with the mucilage, and divided into 100 troches.

TROCHISCI ZINGIBERIS. Troches of Ginger.

	1880.	1890.
Tincture of ginger,	200 grains (or 13.00 gm.)	20 Cc. (or 325 minims).
Tragacanth,	50 grains (or 3.25 gm.)	4 gm. (or 62 grains).
Sugar,	2000 grains (or 130. gm.)	130 gm. (or2000 grains).
Syrup of ginger, a sufficient quanti-ty to make	100 troches.	to make 100 troches.

The tincture of ginger is to be mixed with the sugar and the mixture exposed to the air until dry, then reduced to a fine pow-

der, mixed with the tragacanth and then with the syrup to make a mass which is to be divided into 100 troches. <U. S., p 439. F C F, p 965.

UNGUENTA. Ointments. In the seventh revision of the Pharm. three ointments which were official in the sixth revision have been dismissed, viz: *Unguentum Acidi Gallici*, *Unguentum Mezerei*, and *Unguentum Sulphuris Alkalinum*. No new ones have been added. In many of the formulas there is considerable change in the proportion of ingredients used. These changes will be noted in the formulas in which they occur. The same bases that were directed in the 1880 Pharm., have, as a rule, been adhered to, although it was expected that petrolatum, or some of the other more recent fatty bodies that have been found appropriate, would take the place of lard in the ointment bases.

UNGUENTUM. Ointment. SIMPLE OINTMENT. Lard 800 gm. (or 8 ounces), yellow wax 200 gm. (or 2 ounces).

The wax is to be melted and the lard gradually added. When melted it is to be set aside until it begins to "chill," then it is to be stirred constantly until it is cool. <U. S., p 439. F C F, p 968.

UNGUENTUM ACIDI CARBOLICI. Ointment of Carbolic Acid. In the present Pharm. the carbolic acid is decreased one-half; making the ointment now 5 per cent. of the acid instead of 10 per cent. as before.

Carbolic acid 5 gm. (or 1 ounce), ointment 95 gm. (or 19 ounces). The Pharm. directs to mix them thoroughly; it may be added that the carbolic acid should be liquified by heat, if not already liquid, and the ointment softened slightly by heat before mixing them, in order that the acid may be well distributed. <U. S., p 439. F C F, p 969.

UNGUENTUM ACIDI TANNICI. Ointment of Tannic Acid. The present Pharm. doubles the medicinal strength of this ointment making it now 20 per cent. of the tannic acid instead of 10 per cent. as before. Tannic acid, in very fine powder, 20 gm. (or 1 ounce), benzoinated lard 80 gm. (or 4 ounces).

The tannic acid is to be rubbed with the benzoinated lard gradually added in a glass or earthenware mortar. <U. S., p 440. F C F, p 970.

UNGUENTUM AQUÆ ROSÆ. Ointment of Rose Water. COLD CREAM. The present formula is: Spermaceti 125 gm. (or 4 ounces av. + 180 grains), white wax 120 gm. (or 4 ounces av. + 100 grains), expressed oil of almond 600 Cc. (or 20¼ fl.ounces), stronger rose water 190 gm. (or 6½ fl.ounces), sodium borate 5 gm. (or 77 grains).

The spermaceti and white wax are to be reduced to fine shavings and melted at a moderate heat. The expressed oil of almond is then to be added and the mixture poured into a warmed, shallow, wedgewood mortar, carefully adding, without stirring, the whole of the stronger rose water in which the sodium borate had previously been dissolved. It is then to be stirred rapidly and continuously until the mixture becomes uniformly soft and creamy <U. S., p 440. F C F, p 971.

UNGUENTUM BELLADONNÆ. Belladonna Ointment. Alcohol extract of belladonna leaves 10 gm. (or 1 ounce), diluted alcohol 5 Cc. (or ½ fl.ounce), benzoinated lard 85 gm. (or 8½ ounces).

The extract is to be rubbed with the diluted alcohol until it is uniformily soft. The lard is then to be gradually added and thoroughly mixed. <U. S., p 440. F C F, p 972.

It will be observed that the present formula is quite different from that of the 1880 Pharm., and, probably, quite an improvement upon it. The addition of borax helps to hold the ingredients from separating, and acts, as well, as an antiseptic.

UNGUENTUM CHRYSAROBINI. Chrysarobin Ointment. The medicinal strength of this ointment has been decreased one-half and is now 5 per cent. instead of 10 per cent. as in the 1880 Pharm. Chrysarobin 5 gm. (or ½ ounce), benzoinated lard 95 gm. (or 9½ ounces).

The chrysarobin is to be rubbed with the benzoinated lard gradually added until they are thoroughly mixed. <U. S., p 441. F C F, p 975.

UNGUENTUM DIACHYLON. Diachylon Ointment. The proportion of lead plaster has been decreased in the present formula from 60 parts to 50 parts, which, necessarily, makes a softer plaster than before. The formula now is: Lead plaster 500 gm. (or 5 ounces av.), olive oil 490 gm. (or 4.9 ounces av.), oil of lavender flowers 10 Cc. (or 46 minims).

The lead plaster and olive oil are to be melted together on a water-bath, and when partly cool, the oil of lavender is to be added and the ointment stirred constantly until cool. <U. S., p 441. F C F, p 367.

UNGUENTUM GALLÆ. Nutgall Ointment. The present Pharm. directs this to be made with 20 per cent. of nutgall instead of 10 per cent. as in the 1880 Pharm. Nutgall, in No. 80 powder, 20 gm. (or 2 ounces), benzoinated lard 80 gm. (or 8 ounces).

The nutgall is to be rubbed with the benzoinated lard

gradually added until they are thoroughly mixed. <U. S., p 441. F C F, p 977.

UNGUENTUM HYDRARGYRI. Mercurial Ointment. BLUE OINTMENT. Mercury 500 gm. (or 1 pound av.), lard 250 gm. (or ½ pound av.), suet 230 gm. (or 7⅓ ounces av.), oleate of mercury 20 gm. (or 309 grains).

The oleate of mercury is to be triturated with the mercury, gradually added in a mortar, until globules of mercury are no longer visible. The lard and the suet previously melted together and partially cooled are then to be added and the trituration continued until globules of mercury are no longer visible under a lens magnifying 10 diameters. <U. S,, p 441. F C F, p 978.

It will be noted that the ingredients and their proportions are somewhat changed, but the resultant preparation remains the same, containing about 50 per cent., by weight, of mercury.

UNGUENTUM HYDRARGYRI AMMONIATI. Ointment of Ammoniated Mercury. Ammoniated mercury, in very fine powder, 10 gm. (or 1 ounce), benzoinated lard 90 gm. (or 9 ounces).

The ammoniated mercury is to be rubbed with the benzoinated lard, gradually added, until they are thoroughly mixed. <U. S., p 442. F C F, p 979.

UNGUENTUM HYDRARGYRI NITRATIS. Ointment of Mercuric Nitrate. CITRINE OINTMENT. Mercury 70 gm. (or 2 ounces av. + 205 grains), nitric acid 175 gm. (or 6 ounces av. + 113 grains), lard oil 760 gm. (or 10 ounces av. + 353 grains).

The lard oil is to be heated in a glass or porcelain vessel to a temperature of 100° C. (212° F.). The heat is then to be withdrawn and 70 gm.(or 2½ ounces av) of nitric acid added, and when the reaction moderates, heat is to be again applied until effervescense ceases. The mixture is then allowed to cool to about 40° C. (104° F.), and, having dissolved the mercury in the remainder of the nitric acid by the aid of heat sufficient to prevent the solution from crystallizing, it is to be added to the mixture of lard oil and acid. When cold the ointment is to be mixed smooth by trituration, avoiding the use of a metallic spatula. <U. S., p 442. F C F, p 980.

The increased quantity of nitric acid only makes up for the difference in acid strength of the present acid as compared with the former. The preparation is, therefore, the same as before.

UNGUENTUM HYDRARGYRI OXIDI FLAVI. Ointment of Yellow Mercuric Oxide. Yellow mercuric oxide 10 gm. (or 1 ounce), ointment 90 gm. (or 9 ounces).

The yellow mercuric oxide is to be rubbed with the ointment gradually added until they are thoroughly mixed. <U. S., p 442. F C F, p 981.

UNGUENTUM OXIDI RUBRI. Ointment of Red Mercuric Oxide. The present formula is: Red mercuric oxide, in very fine powder, 10 gm. (or 1 ounce), castor oil 5 gm. (or ½ ounce), ointment 85 gm. (or 8½ ounces).

The red mercuric oxide is to be triturated with the castor oil until a perfectly smooth mixture results; the ointment, previously softened a little by heat, is then to be gradually added and thoroughly mixed. <U. S., p 443. F C F, p 981.

The castor oil is a new addition in the present formula.

UNGUENTUM IODI. Iodine Ointment. Iodine 4 gm. (or 40 grains), potassium iodide 1 gm. (or 10 grains), water 2 Cc. (or 20 minims), benzoinated lard 93 gm. (or 930 grains).

The iodine is to be rubbed with the iodide of potassium and water in a mortar and then with the benzoinated lard gradually added until they are thoroughly mixed, avoiding the use of a metallic spatula. It should be freshly made when required. <U. S., p 443. F C F, p 982.

UNGUENTUM IODOFORMI. Iodoform Ointment. Iodoform, in very fine powder, 10 gm. (or 50 grains), benzoinated lard 90 gm. (or 450 grains).

The iodoform is to be rubbed with the benzoinated lard gradually added until they are thoroughly mixed. It should be freshly prepared when wanted for use. <U. S., p 443. F C F, p 983.

UNGUENTUM PICIS LIQUIDÆ. Tar Ointment. The present formula is: Tar 500 gm. (or 4 ounces), yellow wax 125 gm. (or 1 ounce), lard 375 gm. (or 3 ounces).

The wax and lard are to be melted together, the tar incorporated and the mixture strained and stirred while cooling. <U. S, p 444. F C F, p 984.

The 1880 formula was tar and suet equal parts. The strength is the same but the base different.

UNGUENTUM PLUMBI CARBONATIS. Ointment of Lead Carbonate. Lead carbonate, in very fine powder, 10 gm. (or 1 ounce), benzoinated lard 90 gm. (or 9 ounces).

The lead carbonate is to be rubbed with the benzoinated lard, gradually added, until they are thoroughly mixed. <U. S., p 444. F C F, p 985.

UNGUENTUM PLUMBI IODIDI. Ointment of Lead Iodide. Lead iodide, in very fine powder, 10 gm. (or 1 ounce), benzoinated lard 90 gm. (or 9 ounces).

The lead iodide is to be rubbed with the benzoinated lard, gradually added, until they are thoroughly mixed. <U. S., p 444. F C F, p 985.

UNGUENTUM POTASSII IODIDI. Ointment of Potassium Iodide. Potassium iodide 12 gm. (or 185 grains), sodium hyposulphite 1 gm. (or 15 grains), water, hot, 10 Cc. (or 162 minims), benzoinated lard 77 gm. (or 2½ ounces av).

The potassium iodide and the sodium hyposulphite are to be dissolved in the hot water and the solution rubbed with the benzoinated lard until they are thoroughly mixed. <U. S., p 444. F C F, p 986.

UNGUENTUM STRAMONII. Stramonium Ointment. Extract of stramonium seed 10 gm. (or 1 ounce), diluted alcohol 5 Cc. (or ½ ounce), benzoinated lard 85 gm. (or 8½ ounces).

The extract is to be rubbed with the diluted alcohol until uniformly soft, and then with the benzoinated lard, gradually added until they are thoroughly mixed. <U. S., p 444. F C F, p 988.

UNGUENTUM SULPHURIS. Sulphur Ointment. The present formula is: Washed sulphur 300 gm. (or 3 ounces), benzoinated lard 700 gm. (or 7 ounces).

The washed sulphur is to be rubbed with the benzoinated lard, gradually added, until they are thoroughly mixed. <U. S., p 445. F C F, p 988.

The former Pharm. directed sublimed sulphur to be used.

UNGUENTUM VERATRINÆ. Veratrine Ointment. The present formula is: Veratrine 2 gm. (or 10 grains), olive oil 6 gm. (or 30 grains), benzoinated lard 90 gm. (or 450 grains).

The veratrine is to be rubbed with the olive oil in a mortar and, when dissolved, the benzoinated lard gradually added and thoroughly mixed. <U. S., p 445. F C F, p 990.

The former Pharm. directed alcohol 6 gm. to be used to dissolve the veratraine, and benzoinated lard 96 parts to be added.

UNGUENTUM ZINCI OXIDI. Ointment of Zinc Oxide. Zinc oxide 200 gm. (or 2 ounces) benzoinated lard 800 gm. (or 8 ounces).

The zinc oxide is to be sifted through a No. 20 sieve upon the surface of the benzoinated lard, previously melted, and incorporated with it by stirring until the ointment is cool. <U. S., p 445. F C F, p 991.

Note the change of directions in the 1890 Pharm.

For other ointments, of which there are a great variety, see F C F, p 967 to 994.

VERATRINA. Veratrine. "A mixture of alkaloids obtained from the seed of *Asagræa officinalis*." <U. S., p 446. F C F, p 133.

Soluble in 3 parts of alcohol at N T. but only very slightly soluble in water. Also soluble in 6 parts of ether or 2 parts of chloroform. It is very poisonous and should not be used internally except in dilute solutions or triturates.

VINA. Wines. In the 1890 Pharm. four wines have been dismissed, viz: *Vinum Album Fortius Vinum Aloes*, *Vinum Aromaticum*, *Vinum Rhei*. Of the remaining official wines, nearly all the formulas have been somewhat changed. The changes will be seen by reference to the formulas.

For other than the official wines, of which there are many, <F C F, p 997 to 1014.

VINUM ALBUM. White Wine. "An alcoholic liquid made by fermenting the juice of fresh grapes, the fruit of *Vitis vinifera*, freed from seeds, stems and skins." <U. S., p 447. F C F, p 997

White wines of domestic production as California Riesling, Ohio Catawba, etc., are recommended. The wine should not contain less than 10 per cent. nor more than 14 per cent. by weight, (equivalent to 12.4 to 17.3 per cent. by volume), of absolute alcohol. It may be stated that most, natural domestic wines made in this country do not contain this amount of alcohol, but are fortified when put upon the market by adding alcohol to bring them up to the standard.

VINUM ANTIMONII. Wine of Antimony. Antimony and potassium tartrate 4 gm. (or 60 grains), boiling distilled water 65 Cc. (or 2½ ounces), alcohol 150 Cc. (or 5 fl.ounces), white wine a sufficient quantity to make 1000 Cc. (or 33 fl.ounces).

The alcohol is to be mixed with 800 Cc. (or 26 fl.ounces) of white wine. The tartar emetic is to be dissolved in the boiling distilled water and the solution added to the mixture. When the liquid is cold it is to be filtered through paper and enough white wine added through the filter to make the measure 1000 Cc. (or 33 fl.ounces). <U. S., p 448. F C F, p 998.

In the 1880 formula, stronger white wine was directed, but alcohol is now added in the formula to equal the strength of the stronger white wine; the percentage of the active medicinal agent is about the same.

VINUM COLCHICI RADICIS. Wine of Colchicum Root. Colchicum root, in No. 30 powder, 400 gm. (or 13⅓ ounces av.),

alcohol 150 Cc. (or 5 fl.ounces), white wine a sufficient quantity to make 1000 Cc. (or 33⅓ fl.ounces).

The alcohol is to be mixed with 850 Cc. (or 28 fl.ounces) of white wine, the powder moistened with 100 Cc. (or 3½ ounces) of the mixture and packed moderately in a conical glass percolator The remainder of the liquid is then to be gradually poured upon it and afterwards enough white wine to make the product measure 1000 Cc. (or 33⅓ ounces). <U. S., p 449. F C F, p 1000.

The 1880 formula directed 40 parts of powdered colchicum root to be percolated with stronger white wine until 100 parts, by weight, of percolate were obtained; the proportion of the medicinal agent was the same as now.

VINUM COLCHICI SEMINIS. Wine of Colchicum Seed. Colchicum seed, in No. 30 powder, 150 gm. (or 3 ounces av. + 46 grains), alcohol 150 Cc. (or 3 fl.ounces), white wine a sufficient quantity to make 1000 Cc. (or 20 fl.ounces).

The alcohol is to be mixed with 850 Cc. (or 17 fl.ounces) of white wine. The powder is to be macerated with 900 Cc. (or 18 fl.ounces) of the mixture during 7 days with frequent shaking, then filtered through paper and the remainder of the menstruum added through the filter, and enough white wine to make the measure 1000 Cc. (or 20 fl.ounces). <U. S., p 449. F C F, p 1001.

The 1880 Pharm. directed 15 parts of colchicum seed, in powder, to be macerated with enough stronger white wine to make 100 parts, by weight, of the liquid after filtering. The proportion of the medicinal agent is the same as before.

VINUM ERGOTA. Wine of Ergot. Ergot, recently dried, and in No. 30 powder, 150 gm. (or 3 ounces av. + 46 grains), alcohol 150 Cc. (or 3 fl.ounces), white wine a sufficient quantity to make 1000 Cc. (or 20 fl.ounces).

The alcohol is to be mixed with 850 Cc. (or 17 fl.ounces) of white wine, and the powder moistened with 40 Cc. (or about 1 ounce) of the mixture and packed moderately in a conical glass percolator. The remainder of the liquid is then to be gradually poured upon it and afterwards enough white wine to make the product measure 1000 Cc. (or 20 fl.ounces). <U. S., p 449. F. C F, p 1001.

The 1880 Pharm. directed 15 parts of ergot, in powder, to be percolated with stronger white wine until 100 parts, by weight, of percolate was obtained. The medicinal strength is the same as before.

VINUM FERRI AMARUM. Bitter Wine of Iron. The present formula is: Soluble iron and quinine citrate 50 gm. (or 1 ounce av. + 19 grains), tincture of sweet orange peel 150 Cc. (or 3 fl.ounces), syrup 300 Cc. (or 6 fl.ounces), white wine a sufficient quantity to make 1000 Cc. (or 20 fl.ounces).

The soluble iron and quinine citrate is to be dissolved in 500 Cc. (or 10 fl.ounces) of white wine; to this solution the tincture of sweet orange peel and syrup are to be added, and then enough white wine to make the measure 1000 Cc. (or 20 fl.ounces). The mixture is to be set aside for several days, then filtered and enough white wine passed through the filter to make up the original measure. <U. S., p 450. F C F, p 1002.

The ingredients and manner of making are different than was directed in the former Pharm., but the resultant preparation is about the same. This has been extensively sold, put up, as a popular tonic.

VINUM FERRI CITRATIS. Wine of Ferric Citrate. Iron and ammonium citrate 40 gm. (or 365 grains), tincture of sweet orange peel 150 Cc. (or 3 fl.ounces), syrup 100 Cc. (or 1 fl.ounce), white wine a sufficient quantity to make 1000 Cc. (or 20 fl.ounces).

The iron salt is to be dissolved in 700 Cc. (or 14 fl.ounces) of white wine, and to the solution the tincture and syrup added; then enough white wine to make the measure 1000 Cc. (or 20 fl.ounces). The mixture is to be set aside for a few days, then filtered, and enough white wine added through the filter to restore the original measure. <U. S., p 450. F C F, p 1002.

VINUM IPECACUANHÆ. Wine of Ipecac. The present formula is: Fluid extract of ipecac 100 Cc. (or 1 fl.ounces), alcohol 100 Cc. (or 1 fl.ounce), white wine 800 Cc. (or 8 fl.ounces).

They are to be mixed and set aside for a few days then filtered. <U. S., p 450. F C F, p 1003.

The present preparation contains 10 per cent. of ipecac, while the former was 7 parts of fluid extract of ipecac, with 93 parts, by weight, of stronger white wine, making about 7 per cent. of ipecac. If made with the present official fluid extract of ipecac, the preparation will be cloudy and deposit resinous matter, needing to be filtered, which it does not if made with the former official fluid extract.

VINUM OPII. Wine of Opium. Powdered opium 100 gm. (or 912 grains), cassia cinnamon, in No. 60 powder, 10 gm. (or 91 grains), cloves in No. 30 powder, 10 gm. (or 91 grains), alcohol 150 Cc. (or 3 fl.ounces), white wine a sufficient quantity to make 1000 Cc. (or 20 fl.ounces).

The alcohol is to be mixed with 850 Cc. (or 17 fl.ounces) of white wine. The powders are to be mixed and added to 900 Cc. (or 18 fl. ounces) of the mixture and macerated for seven days in a closed vessel, then filtered and enough white wine added through the filter to make the measure 1000 Cc. (or 20 fl.ounces). <U. S., p 451. F C F, p 2003.

This is pratically the same as in the former revision, the alcohol being added in the preparation instead of using stronger white wine as was directed.

Wine of opium should yield 1.3 to 1.5 per cent. of crystallized morphine, when assayed by the official process.

VINUM RUBRUM. Red Wine. "An alcoholic liquid made by fermenting the juice of fresh colored grapes, the fruit of *Vitis vinifera*, in presence of their skins." <U. S., p 451. F C F, p 1005, 1185.

The present Pharmacopœia contemplates that a natural domestic red wine without the addition of sugar, as claret, Burgundy, etc., shall be used, unless otherwise specified. It should contain not less than 10 nor more than 14 per cent., by weight, (equivalent to 12.4 to 17.3 per cent. by volume), of absolute alcohol.

ZINCI ACETAS. Zinc Acetate. $Zn(C_2H_3O_2)_2+2H_2O$.

Soluble in 2.7 parts of water and in 36 parts of alcohol at N T.; in 1.5 parts of boiling water and in about 3 parts of boiling alcohol. <U. S., p 453. F C F, p 1015.

ZINCI BROMIDUM. Zinc Bromide. $ZnBr_2$.

This salt is readily soluble in water and alcohol.

ZINCI CARBONAS PRÆCIPITATUS. Precipitated Zinc Carbonate.

Insoluble in water or alcohol. In dilute acids it dissolves with effervescense. It is also soluble in ammonia water.

ZINCI CHLORIDUM. Zinc Chloride. $ZnCl_2$.

Soluble in about 0.3 part of water at N T.; also very soluble in alcohol. It is deliquescent when exposed to the air. Very caustic. <U. S., p 455. F C F, p 1017.

ZINCI IODIDUM. Zinc Iodide. ZnI_2.

Very deliquescent and very soluble in water or alcohol. <U. S., p 455. F C F, p 1018.

ZINCI OXIDUM. Zinc Oxide. ZnO.

Insoluble in water or alcohol. Soluble without effervescense in diluted acids, also in ammonia water. U. S., p 456. F C F, p 1018.

ZINCI PHOSPHIDUM. Zinc Phosphide. Zn_3P_2.

Insoluble in alcohol or water, soluble in dilute hydrochloric or sulphuric acid, with evolution of hydrogen phosphide. <U. S., p 457. F C F, p 1018.

ZINCI SULPHAS. Zinc Sulphate. $ZnSO_4+7H_2O$.

Soluble in 0.6 part of water at N T. and in 0.2 part of boiling water, also soluble in about 3 parts of glycerin, but insoluble in alcohol. It effloresces in dry air. <U. S., p 457. F C F, p 1019.

ZINCI VALERIANAS. Zinc Valerianate. $Zn(H_9C_5O_2)_2+2H_2O$.

Soluble at N T. in about 100 parts of water and in 40 parts of alcohol. When exposed to the air it slowly loses valerianic acid. <U. S., p 458. F C F, p 1020.

TABLE OF ELEMENTARY SUBSTANCES. U. S. P., 1890

According to L. Meyer and K. Seubert.

The following table represents the elementary substances and their atomic weights as given in the Seventh Revision of the U. S. Pharmacopœia, in accordance with the latest and most approved authorities—hydrogen being taken as the unit of atomic weight. For table of elementary substances of the 1880 Pharm. <F C F, p 18.

Name.	Symbol.	Atomic Weight.	Name.	Symbol.	Atomic Weight.
Aluminum	Al	27.04	Molybdenum	Mo	95.9
Antimony	Sb	119.6	Nickel	Ni	58.6
Arsenic	As	74.9	Nitrogen	N	14.01
Barium	Ba	136.9	Osmium	Os	190.3
Beryllium[1]	Be	9.03	Oxygen	O	15.96
Bismuth	Bi	208.9	Palladium	Pd	106.35
Boron	B	10.9	Phosphorus	P	30.96
Bromine	Br	79.76	Platinum	Pt	194.3
Cadmium	Cd	111.5	Potassium	K	39.03
Cæsium	Cs	132.7	Rhodium	Rh	102 9
Calcium	Ca	39.91	Rubidium	Rb	85 2
Carbon	C	11.97	Ruthenium	Ru	101.4
Cerium	Ce	139.9	Samarium	Sm	149.62
Chlorine	Cl	35.37	Scandium	Sc	43.97
Chromium	Cr	52.0	Selenium	Se	78.87
Cobalt	Co	58 6	Silicon	Si	28.3
Columbium[2]	Cb	93.7	Silver	Ag	107.66
Copper	Cu	63.18	Sodium	Na	23.0
Didymium[3]	Di	142.0	Strontium	Sr	87.3
Erbium	Er	166.0	Sulphur	S	31.98
Fluorine	F	19.0	Tantalum	Ta	182.0
Gallium	Ga	69.9	Tellurium	Te	125.0
Germanium	Ge	72.3	Terbium	Tb	159.1
Gold	Au	196.7	Thallium	Tl	203.7
Hydrogen	H	1.0	Thorium	Th	231.9
Indium	In	113.6	Tin	Sn	118.8
Iodine	I	126.53	Titanium	Ti	48.0
Iridium	Ir	192.5	Tungsten	W	183.6
Iron	Fe	55.88	Uranium	U	238.8
Lanthanum	La	138.2	Vanadium	V	51.1
Lead	Pb	206.4	Ytterbium	Yb	172.6
Lithium	Li	7.01	Yttrium	Yt	88.9
Magnesium	Mg	24.3	Zinc	Zn	65.1
Manganese	Mn	54.8	Zirconium	Zr	90.4
Mercury	Hg	199.8			

[1]Also called Glucinum, Gl=9.03.

[2]Also called Niobium, Nb= 93.7.

[3]Composed of Neo- and Praseo-Didymium.

WEIGHT EQUIVALENTS.

UNITS OF WEIGHT AND MEASURE.	Weight Equivalents. In Troy Grains.	In Apothecary Weight.	In Avoirdupois ounces. (437½ grs.)	In Metric Grammes.
Apothecary Weight.				
1 Grain (gr.) =	1.	One grain.	0.0023	0.0648
1 Scruple (ʒ) =	20.	One scruple.	0.0457	1.2959
1 Drachm (ʒ) =	60.	One drachm.	0.1371	3.8879
1 Ounce (ȝ) =	480.	One ounce.	1.0971	31.1035
1 Pound (lb.) =	5760.	One lb.=12ȝ	13.1657	373.2420
Avoirdupois Weight.		In Troy oz. (480 grs.)		
1 Ounce (oz.) =	437½.	0.9114	One ounce.	28.3495
1 Pound (lb.) =	7000.	14.5833	One lb=16oz	453.5925
Metric Weight.				
1 Milligramme (mg.) =	0.0154	. . . . .	. . . . .	0.0010
1 Centigramme (cg.) =	0.1543	0.0003	0.0003	0.0100
1 Decigramme (dg.) =	1.5432	0.0032	0.0035	0.1000
1 Gramme (gm.) =	15.4323	0.0321	0.0352	One grainme
1 Decagramme (Dg.) =	154.3234	0.3215	0.3527	10.
1 Hectogramme (Hg.) =	1543.2348	3.2150	3.5273	100.
1 Kilogramme (Kg.) =	15432.3487	32.1507	35.2739	1000.
Apothecary (Am.) Fl. M.				
Distilled water at 15.6°C.(60°F.)				
1 Minim (m.) =	0.9493	0.0019	0.0021	0.0615
1 Fluiddrachm (fl. ʒ) =	56.9618	0.1186	0.1301	3.6911
1 Fluidounce (fl. ȝ) =	455.6944	0.9493	1.0413	29.5285
1 Pint (O) =	7291.1107	15.1188	16.6616	472.4563
1 Gallon (C) =	58328.8862	121.4004	133.2928	3779.6505
Imperial (Br.) Fluid M.				
Distilled water at 15.6°C.(60°F.)				
1 Minim (m.) =	0.9114	0.0019	0.0021	0.0590
1 Fluid drachm (fl. ʒ) =	54.6875	0.1139	⅛	3.5437
1 Fluid ounce (fl. ȝ) =	437.5	0.9114	1.	28.3495
1 Pint (O) =	8750.	18.2292	20 (1¼ lbs.)	566.9906
1 Gallon (C) =	70000.	145.8336	160 (10 lbs.)	4535.9250
Metric Fluid Measure.				
Distilled water at 15.6° C (60°F.)				
1 Cubic Centimetre* (C. c.) =	15.4178	0.0321	0.0352	0.9990
1 Centilitre (cl.) =	154.1786	0.3212	0.3524	9.9906
1 Decilitre (dl.) =	1541.7867	3.2120	3.5240	99.9061
1 Litre† (l.) =	15417.8671	32.1205	35.2408	999.0618
1 Decalitre (Dl.) =	154178.6718	321.2055	352.4083	9990.6188
1 Hectolitre (Hl.) =	1541786.7180	3212.0556	3524.0839	99906.1880
1 Kilolitre (Kl.) =	15417867.1800	32120.5566	35240.8392	999061.8800

* Also called a Millilitre, a cube whose edge measures one one-hundredth of a metre, and which contains one gramme of distilled water at its greatest density.

† A litre of distilled water, at its greatest density, weighs a kilogramme.

FLUID MEASURE EQUIVALENTS.

UNITS OF WEIGHT AND MEASURE.	Fluid Measure Equivalents of Distilled Water at 15.6° C. (60° F.)				
	In American Minims.	In Apothecary (Am.) fluid oz. (455.7grs.)	In Imperial (Br.) fluid oz. (437½grs.)	In Metric Cubic Centimetres.	In Cubic Inches.
Apothecary Weight.					
1 Grain (gr.) =	1.0533	0.0022	0.0023	0.0649	
1 Scruple (ʒ) =	21.0667	0.0442	0.0457	1.2972	
1 Drachm (ʒ) =	63.2002	0.1327	0.1371	3.8916	
1 Ounce (ʒ) =	505.6019	1.0533	1.0971	31.1326	
1 Pound (lb.) =	6067.2238	12.6396	13.1657	373.5921	
Avoirdupois Weight.					
1 Ounce (oz.) =	460 8360	0.9600	1.	28.37	
1 Pound (lb.) =	7373.3760	15.3600	16.	454.07	
Metric Weight.					
1 Milligramme (mg.) =	0.0162	. . . . .	. . . . .	. . . . .	
1 Centigramme (cg.) =	0.1627	0.0003	0.0003	0.0100	
1 Decigramme (dg.) =	1.6270	0.0033	0.0035	0.1001	
1 Gramme (gm.) =	16.2700	0.0338	0.0353	1.0009	
1 Decagramme (Dg.) =	162.7003	0.3389	0.3530	10.0093	
1 Hectogramme (Hg.) =	1627.0039	3.3896	3.5307	100.0938	
1 Kilogramme (Kg.) =	16270.0399	33.8969	35.3070	1000.9385	
Apothecary (Am.) Fl. M.					
1 Minim (m.) =	One Minim.	1-480(1 m.)	0.0021	0.1615	0.0037
1 Fluid drachm (fl. ʒ) =	60=1 fl.dr	⅛ (1 fl.dr.)	0.1302	3.6911	0.2256
1 Fluid ounce (fl. ʒ) =	480=1 fl.dr	1 fl.oz.)	1.0413	29.5285	1.8047
1 Pint (O) =	7680.	16. (1 pt.)	16.6616	472.4563	28.8750
1 Gallon (C) =	61440.	128. 1 gal.)	133.2928	3779.6505	231.
Imperial (Br.) Fluid M.					
1 Minim (m.) =	0.9600	0.0020	1-480(1 m.)	0.0590	0.0036
1 Fluid drachm (fl. ʒ) =	57.6004	0.1200	⅛(1 fl.dr.)	3.5437	0.2166
1 Fluid ounce* (fl. ʒ) =	460.8032	0.9600	one fl.oz.)	28.3495	1.7330
1 Pint (O) =	9216.0640	19.2001	20 (1 pt.)	566.9906	34.6592
1 Gallon (C) =	73728.1280	153.6011	160 (1 gal.)	4535.9250	277.2738
Metric Fluid Meas.					
1 Cubic Centimetre (C.c.) =	16.2554	0.0338	0.0352	One Cubic Centimetre	0.0610
1 Centilitre (cl.) =	162.5547	0.3386	0.3527	10.	0.6102
1 Decilitre (dl.) =	1625.5471	3.3865	3.5274	100.	6.1027
1 Litre (l.) =	16255.4716	33.8651	35.2739	1000.	61.0270
1 Decalitre (Dl.) =	162554.7160	338.6514	352.7393	10000.	610.2705
1 Hectolitre (Hl.) =	1625347.1600	3386.5149	3527.3939	100000.	6102.7052
1 Kilolitre (Kl.) =	16255471.6000	33865.1496	35273.9399	1000000.	61027.0520

* 24 American fluidounces=25 British fluidounces + one grain.

METRIC WEIGHT EQUIVALENTS.

From 0.01 gm. (1 centigramme) to 1 gramme.

Gm.	Grains.	Gm	Grains.	Gm	Grains.	Gm.	Grains.	Gm.	Grains.
0.01	0.154	0.21	3.240	0.41	6.327	0.61	9.413	0.81	12.500
0.02	0.308	0.22	3.394	0.42	6.481	0.62	9.567	0.82	12.654
0.03	0.462	0.23	3.549	0.43	6.635	0.63	9.721	0.83	12.808
0.04	0.617	0.24	3.703	0.44	6.789	0.64	9.875	0.84	12.962
0.05	0.771	0.25	3.857	0.45	6.943	0.65	10.030	0.85	13.116
0.06	0.925	0.26	4.011	0.46	7.097	0.66	10.184	0.86	13.270
0.07	1.080	0.27	4.166	0.47	7.251	0·67	10.338	0.87	13.425
0.08	1 234	0.28	4.320	0.48	7.405	0.68	10.492	0.88	13.579
0.09	1.388	0.29	4.474	0.49	7.560	0,69	10.647	0.89	13.733
0.10	1.543	0.30	4.629	0.50	7.716	0.70	10.802	0.90	13.888
0.11	1.697	0.31	4.783	0.51	7.870	0.71	10 956	0.91	14 042
0.12	1 851	0.32	4.937	0.52	8.024	0.72	11.110	0.92	14.196
0.13	2.005	0 33	5.092	0.53	8.179	0.73	11.264	0.93	14.350
0.14	2.159	0.34	5.246	0 54	8.333	0.74	11.418	0.94	14.504
0.15	2.314	0.35	5.400	0 55	8.487	0.75	11.573	0.95	14.658
0.16	2.468	0.36	5.554	0.56	8.631	0.76	11.726	0.96	14.814
0.17	2.623	0.37	5.709	0 57	8.785	0.77	11.880	0 97	14.968
0.18	2.777	0.38	5.863	0.58	8.940	0.78	12.034	0.98	15.124
0.19	2.931	0.39	6.017	0.59	9.093	0.79	12.189	0 99	15.278
0 20	3.086	0.40	6.173	0.60	9.259	0.80	12 345	1.00	15.432

From 1 gramme to 1000 grammes (1 Kilo.)

Gm.	Grains.	Gm.	Grains.	Gm.	Grains.	Gm	Grains.	Gm.	Grains.
1.00	15.432	4.00	61.729	9.25	142.74	95	1466.0	575	8873.6
1.10	17.075	4.25	65.588	9.50	146.60	100	1543.2	600	9259.4
1.20	18.032	4.50	69.446	9.75	150.46	125	1929 0	625	9645.2
1.25	19.290	4.75	73.304	10.00	154.32	150	2314.8	650	10031.0
1.30	40.061	5.00	77.162	15.00	231 48	175	2700 7	675	10416.8
1.40	21.604	5.25	81.020	20.00	308.65	200	3083.5	700	10802.6
1.50	23.148	5.50	84.878	25.00	347.25	225	3472.5	725	11183.5
1.60	24.691	5.75	88.736	30 00	462.97	250	3858.1	750	11574.3
1.70	25.512	6.00	92.594	35.00	540.13	275	4244 0	775	11960.1
1.75	27.006	6.25	96.452	40.00	617.29	300	4629.7	800	12345.9
1.80	27.777	6.50	100.310	45.00	694.46	325	5015 5	825	12731.7
1.90	29.321	6.75	104.168	50.00	771.62	350	5401.3	850	13117 5
2.00	30.865	7.00	108.026	55.00	848.78	375	5787.1	875	13503.3
2.25	34.725	7.25	111.885	60.00	925.94	400	6172 9	900	13893.1
2.50	38.581	7.50	115.743	65.00	1003.10	425	6558.8	925	14274.9
2.75	42.440	8.00	123.459	70.00	1080.26	450	6944.6	950	14660.7
3.00	46.297	8.25	127.317	75.00	1157.43	475	7330.4	975	15046.6
3.25	50.155	8.50	131.175	80.00	1234.59	500	7716.2	1000	15432.4
3.50	54.013	8.75	135.033	85.00	1311.75	525	8102.0	1 Kilogramme	
3.75	57.871	9.00	138.891	90.00	1388.91	550	8487.8	= to 1 Litre	

METRIC FLUID MEASURE EQUIVALENTS.

The gramme is equivalent to the cubic centimetre.

To convert cubic centimeters into minims, put the Cc. directed, in place of the Gm. in the foregoing tables and add 5 per cent. to the grains equivalent, the result is in minims.

See tables on the two preceding pages.

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F.

P.

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